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C. B. Koford

1962

Journal

Japan to India

Journal - Japan India trip
(For NINDB, NIH, to get Rhesus Monkeys)

February 1, 1962

Puerto Rico to San Francisco

Departed in morning on EAL flight 106 to Chicago. Then via AA to San Francisco, arriving 1600. Went to Berkeley. Hired car.

February 2, 1962. Visited A. Miller, Pittelka, & various students at Museum Vertebrate Zoology.

February 5, 1962. Departed S.F. 0900 on PAA flight 1. Stopped at Honolulu about 1 1/2 hr., 1/2 hr. at Wake Island. Arrived at Tokyo 7 p.m. (7 hr. time change + one day from S.F.). Cold.

February 6, 1962. Visited John Frisch at Sophia University. In afternoon departed Tokyo by train ^(with Frisch) (first class, 3280 yen) for Nagoya. Then by electric train (100 yen) to Inuyama-shi. Stayed at Japanese country inn (ryokan). For 2, cost 5050 yen including dinner and breakfast. Inuyama on Kiso River, where cormorant fishing practiced.

February 7, 1962. Went to Japan Monkey Center, a 15 min. bus ride from Inuyama-shi. Met Masao Kawai and several students of monkeys there. The area a park and recreation place for people. About 4 buildings 20 x 50' with monkeys; some outside large cages (to 40' x 25') covered with plastic sheets. Frosty morning; said to get to -7°C. here. At present they have one expedition in Colombia, which will go down Amazon on ecological studies. And men in India, Africa. Two mountain gorillas were brought from Africa but both died at the Monkey Center. 18 young ateler in one large outdoor cage (plastic covered; nest boxes with heat too). In one building, small glass fronted cages with a few of various species. These included squirrel monkeys (2 born here), Mico, Tamarin, Leontideus, Aotus, Galago, 2 barbary apes, 2 mandrills, Certhopithecus, 1 Trochylus.

Journal - Japan

February 7, 1962.

Inuyama, Japan
Japan Monkey Center

pithecur, Lemur, Presbytis, 1 gelada, several species of Cercopithecus, Hamadryas baboon, Hamlyn's monkey, others. They said they had 54 species of primate. This building for public viewing. Rather crude, and smell very bad. In another building, 100± animals in open ^{small} cages side by side. Mostly M. fuscata. Cages 3' x 3' x 5' mostly. Horrible nauseating stench. These being held for ~~experiments~~ ^{experiments} or treatment. Others in small outdoor cages, including 2 M. mulatta which had baby in February in spite of cold weather. Nest box but no heat in cage. Kawai said that in cages ^{M. fuscata} breed all year round, but in wild seasonal. Copulate in cold part of year. with births May to July mostly. Near Inuyama ~~there~~ they were building a new zoo which will be largely monkeys but also other animals. A fine 2 story concrete modern headquarters; paved roads; metal fences. Modern. About 10 acres. One site for Atelax. Birdhouse-like nest boxes or poles. Only confinement an ^{electric} ~~electric~~ fence 3' high with 4-5 wires. Kawai thought this would hold them. This area one of hills with scrubby pine vegetation. In one valley there were 10 M. radiata running free. On one slope an enclosure about 75' x 75' with fence about 8' high, upper 2/3 of sheet metal. Kawai thought monkeys could climb it but that would return, presumably because old females would stay in. At 4 p.m. we returned to Monkey Center to see free-ranging M. fuscata, which had been fed carr-

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Inuyama, Japan

February 7, 1962

Japan Monkey Center

etc., sweet potatoes, and other food. Visitors gave them peanuts. Many, including dom. ♂, tugged at legs of people in begging. Very quiet animals; little calling or chasing or threat. I saw none, of about 40, in trees. These of a long-haired short-legged subspecies from a certain island. The dom. ♂ had cut R upper lip, somewhat like over ♂ 127. Three sat close to a fire + pawed in ashes, feeding peanuts and other tidbits. Possibly attracted by warmth of fire. Said to sleep in trees mostly but sometimes on ^{ground.} ~~ground.~~ Kawai has written a long article, ^(Will appear in Primate) in English, concerning this band. They were held in a cage for a long period before release and had stayed together, except for an occasional ~~an~~ wandering male. Feeding the monkeys is a big attraction to people here. But when not at the food the animals range over a very steep slope among rocks and pines. / A small but neat magazine, Monkey, at high school level, contains many pictures and current information on primate studies.

shigetaka Kotera

February 8, 1962. Accompanied by Mr. ~~Horita~~ ^{Horita}, French and I visited monkey islands in bay. About 1 hour by train from Nagoya to Kowa, then by small ferry one hour to Shiojima, an island with many fishing boats and equipment. Off of Shiojima about 1/2 mile was Tsuchimijima, about 5 acres and 100' high, which held baboons Papio dequena and Anubis. As we landed on beach, a ♂ and a few ♀♀ baboons came to us, as if expecting food. Usual feeding place stop

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February 8, 1962

Nr. Nagoya, Japan

the island, where we saw most of the population of about 25. A student, Furuya, had written a mimeo report on them. Released 1959. 2 young in 1960, + ⁱⁿ 1961. Four mature ♀♀. Sleep in low trees in protected valley. Range all over island but have favored sleeping places. Seasonal births, tho ♂ capulates at all seasons. Frisch will translate the pamphlets. No. 2 ♂ threatened me when I to 8' from him. No. 1 sat in center food area and clearly dominated it; he was obviously larger than others. Only a few short trees here; from distance looked like dry grassy hill. / Next we went to Kijima, similar in size, about 5 acres, but only 100 meters off shore. with many trees to 30' high and 3' diameter (broad leaved). Good table, picnic table, for visitors. Here too about 25 animals, introduced 1958. Births seasonal, October to January. 9 ♀♀ produced 9 young. 4 adult ♂♂; 8 young ♂♂. There have tufts fur on crown. Macaca irus. Furuya also studies these. / On another island, Najima, were about 60 Formosan macaques on 10[±] acres of half-wooded island. There had been there 3 yrs. Births March-May. 1960 + 1961, 15 young born each year. No individual marks. / We had Japanese lunch in inn, then returned to Nagoya and stayed overnight.

February 9, 1962

TO Kyushu

In morning I left Frisch and took train to Kyoto. (510 yen). There met with Dr. John Henderson, on leave from Univ. Malaya, for 2 hours. He said survey of

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February 9, 1962

Kyoto-Kyushu, Japan

orang in Sarawak badly needed. McClure has made observations of scanning from tree platform. Good opportunities there for studying gibbons. A Harvard boy was now working on Tupaia at Kuala Lumpur. (O. Elliott). / Hendrickson said giant mason jar made good Tupaia nest box. He said seemed to get milder with each generation. Breeding best when ♂ put with estrous ♀ alone, not with others, then removed. Immediate post-partum heat; best time for breeding. Best Best reprod. if young removed from mother as soon as independent. He has published only short article in Nature on tree shrews. / I took bus from Kyoto to Osaka airport (200 yen). Then plane over Inland Sea to Oita. Shikoku has high snowy mountains. Met at Oita by Mr. Mizuhara, who had worked with monkeys there for 6 years. We briefly visited the feeding area at foot of Mt. Takasaki, in late afternoon. Set up for visitors to feed monkeys - fences, curio stands, peanuts, etc. About 30 fed on remnants food. Much more chasing and aggressive action than at Inuyama. I saw a high ranking ♂ do a "turn-away" from ♀. Said to be 80 ± in one group, about 720 in other. The big group in area 1 x 2 km.; new area 1 x 1 km. occupied by small group. Mizuhara said he recognized 300 individuals. Vegetation rises to 50' with deciduous and evergreen broadleaf mixed. M. thought the softwood the main habitat. Monkeys not physically confined, but forest thin or cut in surrounding areas so an ecological island of forest. Monkeys could easily walk down to main coast road and sea. Occasionally a male wandered from site, but no one seemed concerned about

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February 9, 1962

Kyushu Is., Japan

this. (Stayed in Kamenoi Hotel, Beppu, for night (1720 yen).

February 10, 1962. Again visited feeding area and area slightly upslope, in open forest around Buddhist temple. Monkeys had removed so many tiles from roof, it had to be repaired twice. I saw 2 imm. grooming large ♂ (photos); M. said they were 1 and 2 yr. olds grooming 6 yr. old. In morning (1030) only small groups present. Many people (Saturday) fed them. Sometimes monkeys fought each other, dashing among the people. Occasionally one climbed onto shoulder or head of visitor. Many grabbed pants leg in begging. Others searched side pockets of pants + coat + were difficult to get rid of. But apparently no one was injured. Some had areas of fur thin or lacking. One had crippled leg held doubled up. Other[♂] had old cut in lip, so teeth showed. Many had faces resembling Cayo Is. rhesus, but generally redder. Size larger than rhesus. Often highest ranking male punished imm. or others. At least 500 people at ~~the~~ feeding area at once; they pay 30 yen admission. I think personality gentler than rhesus; otherwise people would be injured. Probably also less arboreal, though said to sleep in trees. In afternoon the large groups came down to feeding area & fed. Somewhat difficult to communicate with M. as his English only fair. But in general his information seemed imprecise and poorly organized in his mind, with apparent attempt to fit what Stani had described (only about 200 animals in Stani study). M. could not clearly distinguish dominant from subdom-

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February 10, 1962

Kyushu Is., Japan

most males; rather a continuum. And he had given little thought to relating σ to ϕ rank, although he said that in some other groups they were mated in the rank order. There were some solitary males, apparently in good health. Numbers determined by births minus deaths; that is, no actual ~~surveys~~ census made. If one noted missing, special watch kept. But loss often from males leaving groups and assumed not dead. H. M. (not Kawai) recognized that any male reached high rank through influence of mother; they thought that all σ or ϕ became peripheral at about 4 yrs. But M. pointed out a 6 yr. old ϕ grooming its mother. 1 One imm. had white paws. M. said that several had white areas. 1 There were 2 crude box traps in shed, but no large traps nor any laboratory even of crude sort. No weights, measurements, examinations of dentition here. (at JMC, organs of monkeys that died preserved for study of testis, cause death, etc., but I think no such studies yet made.). M. is going this August to Stanford for a year at the research institute (Washburn sponsored, I think). 1 In evening I took train back to Kyoto (3720 yen, first class). Alternative would be boat to Kobe, then train.

February 11, 1962. Arrived Kyoto station 0920 and was met by Kiyo Nakajima (amateur monkey-watcher) and S. Hirose (curator of JMC). Latter spoke especially good English. They told me (or Kawai earlier) that a population of about 48 on Kashima (Mag Miyazaki) in S. Kyushu, an island about 4 km. in circumference, visited about 4 times a

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11 February 1962

Kyoto, Japan

year for study. | We took bus (15 km.) to Inatayama, a monkey park on a hill (again mostly pine, but cherry, oak, maple too, & they thought that few pine in the native habitat.) These monkeys, now 114 (Nakajima), provisioned since 1954. Births May to Aug., with 15 born 1961. About 14 sq. km. of forest, but monkeys in only a small part of this. | The group at Inatayama started with 34 brought from Yakushima (S. Honshu) in 1957. First kept in small cage about 6 meter diam. Then in larger, about 10 by 30 meters, for ^{a period} ~~months~~ of months (?) before release. They did not know that the confinement was necessary to form a group. | In sloping canyon was 80 meter diam. roughly circular enclosure with sheet metal sides 9-12' high (cyclone wires bottom 2 ft.) with electric wire on top. There had held ~~releases~~ ^{about 15 born in all.} monkeys (now 23?) for 4 years. In 1961, 5 born 5 March to 28 July. One ad. ♂, 5 ad. ♀♀. A shed and refreshment-selling shack inside pen. 20 small dead trees (to 10' tall), said to have been killed by monkeys. The caretaker had a notebook and had recorded daily observations, thoatolally untrained observer. He said the adult male did all the mating. One male had escaped by jumping 9' fence, without preliminary run. Copulation seen 28 Aug. to 14 Mar. ^{Male} presently consort^{ing} with ♀; some^{times} consorts for several days with same ♀; other times with 3 (or more?) females in one day. No JMC men have studied here. (It would be good opportunity to make similar setup for

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Feb. 11, 1962Kyoto, Japan

M. fuscata and companion species. / A few hundred feet up trail on 100' wide flat in open pine woods, free-ranging M. fuscata. Since last December, ^{they} had remained near feeding ground (Nakajima seemed to be main student of these). He said moved more widely in spring and fall, before and after birth season. Many ^{tall} cherry trees near and among pines; mostly hardwoods in nearby areas where macaques occurred naturally. Here too, people fed the animals, so very tame. But not obnoxious as at Takasagiyama - did not grab & climb on people; more shy here. Many appeared to have start of molt on crown (also at Takasagi). Mr. Iwata very much interested in his monkeys. He is of bedding mfg. family. He treated us to lunch & later to few Shotsuru (spell?) - nabe dinner (fish & veget. boiled in pot on table). Stayed at Yoshikawa Inn (Japanese style, westernized).

February 12, 1962. Went to Osaka airport and took CAT DC-6B for Formosa, with stop at Okinawa. Cloudy. High snowy mountains on Shikoku. Flew over Kyushu. Rice paddy, terraces, water buffalo, on Formosa. Taipei energetic ^{city}, but not tourist oriented. The pedestrian outstanding feature. Parks and public buildings seedy. Overnight at airline expense; very good. Many U.S. military here.

February 13, 1962 Via CAT jet to Hong Kong. Stayed at Sunning House in Hong Kong. All quite modern, touristy, garish, and in English, though many touches of Chinese color (food, souvenirs, dress.)

Journal

February 14, 1962

To Bangkok, Thailand.

Via JAL to Bangkok. Plane 2 1/2 hours late in starting, so arrived evening. Stayed at Kings Hotel. ^{about 15 Russians there}

February 15, 1962. Rode bus (2 1/2 \$) and walked around town.

Visited Ministry of ^{Public} Health, where WHO office located. Old un-air conditioned dergy building. I was directed to Mr. SIRIVAT VISESHSIRI, administrator in P.H. He said his cousin, THONGLAU PUNYANITA, used to export animals from Thailand. I went to see Punyanita. He plump, about 60, very talkative about himself. He said he gave up exporting about 3 years ago. He said rhesus monkeys rather scarce in Thailand, tho many M. cir in the southern parts. He did not think we could get even M. cir at \$10 locally, in numbers.

/ His address: Boon Vanit Travel Agency, 8-12 Burapa Rd, Box 49, Bangkok. / I went to Seato headquarters, a separate unpretentious building in park-like area. Talked with Information Officer. He said that Gordon Young, U.S.O.M. 70040-9, Petchburi Road, Bangkok, was animal exporter living in ^{north} ~~west~~, who might know about availability of rhesus monkeys. / Possibly also could get information from SEATO General Medical Research Lab., Royal Thai Army Inst. Pathology, Rajvithi Road; Lt. Col. Oscar Felsenfeld. / In evening left via Air France flight 173 for Delhi. / Dr Boonsang away in Java. Delhi, India

February 16, 1962. Was met at airport by two men from Patterson ^(monkey exporters) Co., and was installed in Ashoka Hotel. Huge size, but service

and food poor. Crows, hawks, circled about and landed on building cornice by dozens in morning. Country weedy, scrubby trees, little shade; unattractive. / Visited Zoo Farm

Journal

16 February 1962

Delhi, India

of Patterson Co. on Old Gurgaon Road. Again met Bob Anand and George Dhanwan, as yesterday. Also Mr Kholi, apparently manager of the farm. And Dr ^{Sulpramaniam} ~~Sulprama~~, veterinarian. Area of farm about $2\frac{1}{2}$ acres. Wall about 9'; with wires stop this. All clean, concrete and stucco construction. Monkeys kept in a large shed about 35' wide and 200 feet long, open at sides. Inside on concrete floor were two rows of large cages, $8' \times 12' \times 6'$ high, of wood with 1" square wire mesh. In cages were groups of monkeys of same size. For example, 50 + lb. monkeys in one. ⁴⁻⁵ 5-6 lb. in another, ^{5 lb., 6 lb.} etc. Capacity in all over 300 animals. Some cages marked capacity as 87 (tho only 50 in). ^{Between sides} Front of cages, about 3' clearance. About 40 cages in all. In one cage an albino ♂ which had been kept (from inf.) about 5 yrs. The vet said TB tests given only if requested. About 1% positive when tested. Those ill were not shipped but were segregated and treated. In winter respiratory disease common. About 30 4-6 lb. sick monkeys were together in one cage. Farm area 11000 sq yds. (1.1 hectares). Buildings one story. Admin. staff about 10. Monkeys brought from field in bamboo cages, mostly about 3' x 3' x 1½'. About 12 small monkeys in one. Animals checked by representative in field before ^{brought} brought in. By government rule, none under 4 lbs. can be shipped. In cages in shed, only about half cages with monkeys. Few in 7-9 lb. gp., + none larger. Food given is mostly mixture of whole rice, barley, gram (like dried peas). Fed 3x a day. Midday, food mixed with raw sugar about 3x a week. Vegetables, fruit, given every day. Cooked vegetables also given. One fruit given is BFAh, a 4"

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16 February 1962

Delhi, India

diam. - starchy fruit with hard thin shell. & Cooked if green. /
 Weights taken in 5 lb. bamboo cage. / Animals held a few
 days to 1 mo., about 2 wks. average. Shipping cages of
 1/2" stucco wire, metal feeding & watering tray each end, metal
 tray below. Wt. cage 8 lbs. 36" x 24" x 18" size. Cage
 holds 10 4-6 lb. monkeys, or 6-8 lbs. Ends & lower half of
 sides of plywood. / Patterson has a ^{monkey} farm at Huahin, 4
 hrs. from Bangkok on gulf of Siam. Near famous golf club.
Cynomolgus monkeys, mostly from S. Thailand, (some from
 there sold to British, Scandinavian. / There was also a
 cooperating zoo farm about 10 miles from Kuala Lumpur. /
 In evening we took train from Delhi to Kanpur, SW of
 Lucknow. Anand and Dhawan accompanied me.

17 February 1962. Arrived 6 a.m. Kanpur. Their man there
 said trapping planned for area about 150 miles to NNW, leav-
 ing next morning. Greener here, & more trees, lawns. Many
 birds in garden of hotel, and I saw one mongoose there. Light-
 ning and rain about 8 a.m. / About 10 a.m. went for drive to
 look for monkeys on outskirts Kanpur. One group in open yard
 and on adjacent houses. 3 ad. ♂♂, 5 ad. ♀♀ (at least 3 pregnant)
 and 2 yrl. One ♀ had vag. bleeding. Yrl. chased crows
 back from food. 10± crows ate food thrown out for monkeys.
 Health good, apparently. No intermediate age classes. Man
 calls ha-ha-ha as feeds, & monkeys come. / at another site
 by river bank, where bathing places & several holy men, we
 fed about 15. There included but one ad. ♂, 8 ad. ♀♀, 3 yrl.,
 4 imm. Photos. Other small groups in this area. One

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17 February 1962

Kanpur, India

group included 1 ♂, 5 ♀, 2 yrl., 2 juv. 1 ♀ in one area had withered hind leg. 1 Mr. Gupta, in charge of trapping, said that muslims trap with buried net. Hindus use box trap with string release, snare set on ground, or group of men that force animal up tree and then catch it (about 15 men; sometimes they use net for a wall on one side). 1 We drove to another known site. About 35 animals. 2 ad. ♂♂, one being old & apparently blind in one eye. Several yrl., but ^{nearly} none between 4 and 10 lbs. Some ♀♀ pregnant. No new infants. I took photos. 1 Gupta said big rhesus groups in Nepal but not allowed to catch. Apparently he buys monkeys from many local boys and groups. ^{at Berkeley House Hotel during day} ^{hundreds of the grey-backed ravens & in evening several toward long-tailed green parrots flew high over.}

18 February 1962

Lucknow, India

^{drove to Lucknow in evening and}
We had stayed in Carlton Hotel; old style and plain but satisfactory. Across road was Botanical Garden. I walked there and saw a booby flight & appearance flicker-like. Also two chipmunks (stripes on back) in trees, & other birds. Many grey-backed ravens. 1 About 100 m. visited small monkey farm of M. Sikander Begum (photo her & man monkey contractor). This in old ^{adobe} ~~adobe~~ section of Lucknow. Clean walled yard about 75' x 100'. In shed with open side, 12± bamboo cages about 3' x 3' x 1½', with 10± 4-6 lb. monkeys in each. Fed grain. Seemed healthy. Woman is one of Patterson's largest dealers. About 150 men bring monkeys to her. We saw a cageful coming by bicycle rickshaw. In cages weights. Mifed held a day or so for shipment to Delhi, where weighed and segregated. In street nearby saw 3 on ropes held by woman; pets apparently. 1 In afternoon we drove NW(?) about 2 hrs. to Kheri Town. On way saw crowned crane & large red-headed cranes near road, 1 peacock, one

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18 February 1962.

Nr. Lucknow, India

gr. 5± adult rhesus. Open country; green wheat + sugar cane. Road lined with big mango trees and planted groves similar trees. Kheri in Saharanpur district on NE railroad. We went to dirty adobe adobe part + stayed at house of Abdul Rahim, bearded Muslim monkey contractor. Lots of flies; mosquitoes at night; only water a yard pump - etc. Supposedly trap monkeys tomorrow afternoon (yesterday it was morning).

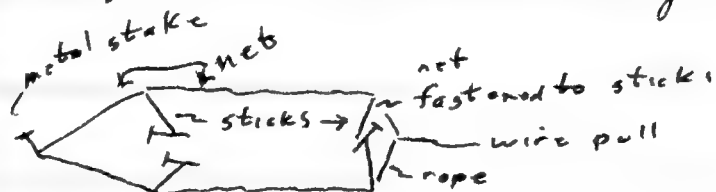
19 February 1962. With 8 men in little Ambassador car, drove to main part of Kheri (said 90,000 villagers). Plenty of native color, of carts, hotel met, street side open cooking. Drove on to Gola, then off on dirt road to canal road. Much sugar cane. (Forest about 70' tall, mod. thick, mixed hardwoods, along parts of canal.) ^{before left main road.} Saw 1 bunch 10± rhesus eating spilled cane, No juvs. seen. Guptha told me the leased monkey "range" was about 14 sq. mi.; Rahim had lease here. Saw 4 large langurs at edge forest near canal; about 10' up in trees. Finally arrived at Kukra, where train station. This headquarters of groups of monkey catchers; they had already caught about 15 monkeys today + were apparently finished (11 a.m.). We drove on to Mailani, also near the canal on rail line. At 1145, left on foot and walked about 1 mile NW along R.R. track to large forest patch (70' mixed hardwoods; flat; fairly open; trees to 12" diam. Trees tall + very narrow; leafed low. Mostly deciduous. No conifers. Leaves mostly large (2-3 x 4-5"). The men already had a net set in an open road 100' from R.R. track, but they said a cart had frightened the monkeys away. After much urging, I got them to set another net. They put it on another cart track; I saw at least 3 ad. rhesus near. Set about 1 p.m. Men walked within 20' some rhesus w/o much alarm. Net soft, 2" sq. mesh, with 1/4" ridge rope. Whole about 12' long and 6' wide - too small to catch large groups. Pull wire single, about 100 yds. long. Net + support sticks buried in 2" trench, covered, + leaves

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19 February 1962.

NW. of Lucknow, India
(Mailani)

scattered over so invisible. Bait grain - only about a round put.



Rope at top edge; lighter line at bottom edge, which is in bottom of trench.

Men set about 100 yds. away in open; talked & joked; easily heard beyond 100 yds. In forest occasional termite mounds to 6' tall. 1340, oxcart drove past first trap. Both taken up about 2 p.m., or reported about 50 monkeys at another site. We walked to new site on broad dirt road thru forest $1\frac{1}{2}$ mi. W. of town. Net set by side of road. Seven monkeys attracted to site by men scattering grain. 1 ad. ♂, 4 ad. ♀♀, 2 yrl. But none actually stayed at net site. Set 3:15 p.m. ♂ led group marks. One ♀ had yrl. on back. No luck. Walked back to Mailani. Slept in a sort of hostel, where room & rope bed provided; clear enough, but mosquitoes, & dogs barking. Supposed to get early start for trapping tomorrow.

20 February 1962 We drove back to Kukra, arriving 0720 at camp of monkey trappers. Grass huts; slept ^{dried} ~~moss~~ grass piled on ground; very primitive. They had about 6 small rhinos in 2 bamboo cages. About 15 men & boys with ropes, nets, hatchets, & picks, soon set out afoot for forest patch 1 mile N. of Mailani. We saw two ad. ♀♀ near road, but there not pursued as presumably going to catch a group. Arrived 0845. Much yelling back & forth among the men. A few climbed trees & hacked off branches, or cut down low trees. Soon a 5 lb. monkey seen in trees. He moved from tree to tree. Finally they cut many branches from one tree, but left one long branch protruding toward another. This branch was cut around, halfway through, and a long $3/8$ " rope run over limb. A net about 3' high then put around ~~base~~ base of tree, about 50' x 100' area. Then much ~~shouting~~ shouting, throwing sticks, including men in trees. The little monkey fled his tree, going onto tip of the cut branch,

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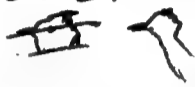
Mailani, NW of Lucknow, India


which was then broken with pull of the rope, & the monkey fell and was grabbed. ^{Catch at 0945.} A ♂ with 24 teeth; 5 lbs. / Meantime I had been told by Armand & others that the men had sent for hunting dogs, which would drive the monkeys into the nets. I doubted this; they were vague concerning how dogs would help (apparently they had not seen them used). Finally 2 dogs brought. Reported were 100-125 monkeys about 1/2 mile to SE in forest. We walked there. Men shouted much as usual and said that monkeys in trees, but hidden in foliage. Finally we saw a small one. Again several men climbed trees, lapped branches & under-story trees to 4" diam., & prepared half-cut branch with rope, & put net below. But apparently monkey escaped in tree crevices, about 1115. Possibly dogs showed which trees had monkeys, or which trunks bore monkey scent, but no other apparent use in forest. Forest bounded in straight line on one side by open fields (b+w pix). I saw a couple more tiny monkeys in tree tops. / It was now announced by Armand that the trappers had deceived them and taken them to a poor place as they could get 100% of the price here, while in a better area they were entitled to only 50%. / We left the men to continuing line trying and returned to Mailani. The 3 or 4 groups of trappers had not yet returned there. / Clear morning; high Himalaya peaks visible. They stuck up individually much more than I had expected. / A common large vulture has white under wing coverts & some condor-like. Also has white center of back. / About 3 p.m., at edge forest 1 mi. S. of Mailani, 1 ♂, + ♀ ♀, + yr1, + 1 2-yr. One had wide penis (♂?). All very quiet. Disturbed at edge forest, they walked into woods. Occasionally one ascended a few feet up tree, as if to look about. Spread about 100 yds. on ground. / about 5 a.m. at forest

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20 February 1962.

Mailani, N. of Lucknow, India

by ^{RR} tracks 1 mi. NW of town, saw σ^7 and $5 \pm \text{♀♀}$ in green field (wheat?) at edge forest. A woman chased them away, & they walked quietly into forest. I saw 2 saurus cranes. Also a black phoebe-like bird with crest and crest-like tail , atop tree. Little sign mammal life on forest floor, but saw small owl & many screech bats about 6:30 p.m. Near RR station were 3 large Pteropus (?) dead entangled in telephone wires near a tree. / Night at Mailani.

21 February 1962. It was reported that ad. σ^7 and 2 ad. ♀♀ caught at one site yesterday, and 4 at another, near Mailani. / 0650, with Gupta, George, Bob, others, departed for Kuriya, $\frac{1}{2}$ hr. N. on RR track. Trappers and hand catchers had gone ahead. In grove of large mango-like trees, with no undergrowth, behind station were at least 17 monkeys; 2 ad. $\sigma^7\sigma^7$ (one very old), 1 subad. σ^7 , 3 yrl., 3 apparently 2-yr., 0 ♀♀ . Most ♀♀ appeared to be very old. These could be trapped only if permission of town council obtained. σ^7 showed little fear of dog 3' away. Many people & carts went thru the grove. We walked then to NE across ploughed fields, wheat fields, & past some patches to a 5 acre patch of 70' hardwood forest. Trees mango-like. ^{florid} ~~thick~~ ^{thorny} 10-15', but much opened by ~~savanna~~ ^{savanna} patches. Trappers absent! I saw 1 σ^7 and $6 \pm \text{♀♀}$ with 2-3 yrl. in trees; quiet & spread 100 yds. / We then waited while one man went to find trappers. Eventually they returned & we walked $\frac{1}{2}$ mile NE to a forest patch of about 3 acres, arriving about 10 a.m. The net trappers had 2 nets out; they had taken one bunch about 8:30 and again 0930, all small. Trappers impatient; about every half hour one to trapsite to check or put bait. Photos (B & W #4, 5) of this woods. No more catch by 1200. Then, for me, they trapped 1 ♀ (20 teeth). When wire pulled the net in side view appeared:  Weak point is top corner toward wire; the other sticks steady. / We then walked S. to another

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21 February 1962

Kuriya, (N. of Lucknow), India
17th.

patch of woods, more broken, where hand-catchers at work. They had 1 large
^{2 about 4 lbs.}
 lean ♂, & ~~one small monkey~~. I watched them catch an old ♀. Twice she fell
 into netted area but escaped up branch or over net. Then a branch tied
 to the tree to make trap branch & she was driven onto this. Captured by
 driving into net. Very old (or most ad. ♀ ♀ apparently). They sometimes
 broke the branch before she hit it, so ♀ fell 15± ft. to ground. We
 walked back to Kuriya (1500). The net trappers had already return-
 ed with catch (15 small in one trap in 4 catches; 1 small & 1 large ♂
 in second trap in same area (call it K-1)). The hand catchers returned
 with 6 from area K-2, W. of Kuriya about 1½ mi. I was dis-
 appointed that trappers quit so early. We returned to Mailani
 on train in evening. Stayed at Mailani. Dusk curry & panache for dinner.

22 February 1962. In morning inspected 5 cages of monkeys
 captured near Serawan, Kuriya, and Mailani, for shipment
 to Delhi. Three ♀ ♀ had faces cut up, perhaps from sides
 of bamboo cages. With Gupta, drove via Bhagabanapur
 and Sitapur to Lucknow. Saw about 5 groups of mon-
 keys on the way; no intermediate age classes, or before.
 Gupta told me that railroad would not ship animals
 unless permit countersigned by contractor or his repre-
 sentative. The use of "range" permits issued by local agents
 of the DFO (district forest officer). Senior is the CFO (chief
 forest officer). Sarup Singh was man-Friday of Gupta,
 who helped in purchase and disposal of monkeys (Gupta
 said that the contractor actually paid Singh, tho the Delhi
 office thought that Gupta did - much friction within the
 P. organization, it seems). At Lucknow met Ahmad, & I

Journal

22 February 1962To Delhi

Took train back to Delhi with him, arriving about 8 a.m.

23 February 1962. Ticket business in Delhi. Monkeys arrived from Mailani. Put each group in separate large cage. I departed by plane at 3 p.m. for Bombay, arriving about 5:50 p.m. Then took train at 11:20 p.m. for Poona (24 rupees), and arrived 5 a.m.

24 February 1962. Visited Verma Research Centre at Poona, especially Harold Trapido. We discussed Bonnet macaque & langur work of Japanese group near Dharwar. They have modern new wing on the centre, & modern darkroom and other equipment. Trapido said first new M. radiata in January of this year. Some langurs in roadside Forest near Poona, but we saw none. Many 1-large ox carts here; horns tall, often painted or decorated. But little old-India atmosphere in Poona. Trapido drove me around area. Heavily grazed rocky hills with dry grass, now merely bare tufts, of apparently coarse species. Not an attractive area at this time of year. Trees along watercourses but no forests. Took train in eve for Dharwar.

25 February 1961. Train late; arrived about 1430. Met by Kenji Yoshida, youngest of 4-man Japanese Primate Research Group. They had rented an old house about 200 yds. SE of the station. The full staff was Dr. Kawamura (Osaka City Univ.), Sugiyama (pre-doctoral student, Kyoto Univ.), and Yoshida (pre-master's, same), and Dr. Parthasarathy (Mysore Univ.). all but Yoshida now on a jeep tour to Kerala. The project started in June 1961. Main studies so far were of langur groups in an area several miles W. of Dharwar. Bonnet

Journal

25 February 1962

Dharwar (Mysore), India

macaques present along roadsides, but not intensively studied as yet. / We drove to oldest study area, a mixed deciduous forest about 40' tall. a legume + a few other trees had some leaves. Little understory or cattle grazed there, + people burned the leaves + cover to improve grazing (^{burning} go now). Crops planted nearby (grain). Bamboo thickets in some sites. / We saw groups 1. 1 ad. ♂, 11 ♀♀, 1 inf., 4 ± imm. Some ♀♀ pregnant. The langurs spent much time on the ground at this season. They fed much on the new green buds + leaves. No animal matter taken. (Y. said they sometimes ate red clay.). They also went easily from tree to tree through crowns. Y. said only ♂ or ♂ fight (or threaten) when two groups come together. When disturbance (by man or dog) at long range, ♂ gives low whoops whoops call, low gibbon like. But when disturbance closer, no whoops, but threaten by grinding teeth. Compared to macaques, Y. said, much less aggressive among themselves. Nearly all groomed nearly all others. Mother allowed others to take her infant even on day of birth. In alarm often left infant behind. Do not take preferred food readily, so perhaps difficult to trap with bait. The infant black furred; later head gray + then body. Most groups have only one male, tho some as many as 7 (mostly young males). Also ^{all} male groups of mixed age classes, many quite young, furred; sometimes 25-30. They had plotted home ranges of groups. Home range changes with season, apparently because of change in food supply. Often many remain in one large tree for several

Journal

25 February 1962

Mr. Dharwar (Mysore), India

hours at midday (would be fairly easy to catch by tree climbing and ground net, à la rhesus in U.P.).

26 February 1962. With Gorbiba visited second area near first, near Aliyoh 8" post, + saw two more gps. Presbytis entellus.

Took a few b + w pictures. Trees mostly under 20 ft. tall. The Kyoto gp. now has expedition on shore Lake Tanganyika in Africa, studying chimpanzees in savannah area. Lions + leopards said dangerous there, so they took electric fence equipment. / M. silenus occurs farther S. in India. Simon, from Univ. Calif., came to study it but found too few, so studied M. radiata instead. / Y. was in Assam 3 years ago, + saw Hoolock Gibbons there (with advice of Mr. Gee of Upper Shillong). He said they hunt rhesus monkeys there, so he could not get counts undisturbed population for Southwick, who requested same. / In Dharwar region, M. radiata seems to be only in disturbed areas, along edges roads + fields, + not in forest away from roads, Y. said. I saw several groups 5-10 along roadsides, one gp. picking tamarinds. They looked scrappy. / Y. told me he had seen no "courtship" in langurs. In M. fuscata he said ♂ approached ♀, swatched lips, came very close, + turned quickly away - the same thing I call the "turn away" in rhesus. / We drove through Aliyoh and on to S or SW. Mostly bamboo forest of tall bamboo replaced dry deciduous forest. Then less bamboo + more tall trees. Many logs to 16" diam., + timbers cut, at some stations. Passed "swmill" at Kannigeri. Then mostly evergreen trees

Journal

26 February, 1962

Nri Dharwar, Mysore, India

to 100' tall, with patches of bamboo in understory. / 1330, reached Yellapur, a small town. Saw tall spindle betel nut palms growing this area. Bananas, coconuts, watermelon, eggplant, in markets. We drove on a few miles to top of Western Ghats, where forest nearly all evergreen but still many large dry leaves underfoot. Trees to 100'. We saw on gp. M. rodota in tall trees by the roadside, progressing tree to tree 30-50' up; about 15 animals. Y. then in langurs thru forest but M. rodota only at edge where disturbed area. We passed beyond hamlet of Idagunji. Some curly hair, ^{black} back, skin, negroid features in this area. Our end point about 14°58'N., 74°-43' E. Some trees had small butterflies. Saw + heard barbet. Then ~~near~~ Forested slopes at about 10' alt., sloping down to sea (about 40 mi. by road). Few epiphytes, as intense dry season tho rainfall high. Y. said more epiphytes farther S. about 100 miles. / On way back, ^{past} Yellapur a few mi., ^{walked} among 30' bamboo clumps in 100' forest. Saw hornbill, forked-tailed drongo, + Y. said paradise flycatcher. Saw one gp. langurs here, + heard distant call of ♂. Cattle kept vegetation open, tho apparently a govt. preserve so no clearing in forest. / As we neared Hubli, saw several groups of M. rodota at roadside. Farther out, 6± gpos. of langurs; most of them in tight groups in a single tree (10± in 5± yds. diam.). Y. said they usually gather thus at midday in on hot days (no clouds today). / In region, Japanese have censused 730 langurs in 42 groups. Their only charts were of number of ad. ♂♂ or ♀♀ per group. Next they will study food habits, Y. says. For 2 yr. study of 3 men, progress seems slow, + important phases not started. Measurements + quantification little.

Journal

27 February 1962

Nr. Dharwar, Mysore, India

Again clear. About 0830 (why so late?) we left for first langur area, nr. Aliyah 8 milepost. There Y. observed + photod. group 2 (10711 ♀♀ 5 inf.). He said no more pregnant, and that gp. 1 had 17 ♀♀ and no inf. (about among selves.) About 11 a.m. about 8 of group in single tree, in 15' diam., + stayed there long. Inactive at midday. But this group had been tamed thru watching + allowed approach to 10 yds. / Y. said inf. assoc. ^{+ play} each other much less than in macaques. / I observed another group in open 30' tall nearly leafless forest where ground burned. Some ran off one way, + some another - poor cohesion. (Y. said ♂ often runs away from gp.). Across road amid well-spaced shrubs with occas. trees (leafless), langurs ran on ground when I approached, and would not ascend trees. (Y. said they do ascend when dogs pursue.) / One found one "flashed" closed teeth at me, then left (teeth prom. in black face). / Y. said only ♂ grinds teeth in aggr. display. Y. said other ♀♀ take infant from mother especially during first week of life. / I departed Dharwar by train 1600 for Bombay.

28 February 1962. Arrived ~~Pune~~ ^{Bombay} 0625; on to ~~Bombay~~ ^{Bombay} on Decca Queen, arriving 1030. Cloudless, misty, hot, still day. Phoned Dharwar, Delhi, who said successful trapping near Tanakpur, about 3 mi. N. Bareilly, in Kaumash Hills area at Nepal border. / During day visited aquarium, + Bombay Natural History Society headquarters. They had one large room, about 30 x 80 ft., crowded with old wooden specimen cases + musty specimens. Very run down appearance, tho fair library + excellent balcony view ^{over} to the bay. Talked with 2 men there, + with Salim Ali (ornithologist) by telephone. A migratory bird census to be held near Bharatpur, 107 mi. by rail from Delhi, in Rajasthan, Mar. 15 - April 1. / Took evening plane to Delhi, arriving Palam 2145.

Journal

1 March
~~29 February~~ 1962

Delhi, India

Spent most of day arranging for reception of ^{tuberculin} ~~drugs~~ shipment (Mrs. Stover & Lt. Col. Reeves at Embassy; Mr. Cully at WHO, SEARO). ~~At~~ WHO headquarters in Patiala House, Princess Park. Good building but much antiquated & crowded interior, with wooden partitions. Presumably WHO will receive tuberculin, & as they have no refrigeration, Embassy will store it. / Examined monkeys sent from Mailani. Some pregnant; some very old. Many had cuts on head or legs from bites of others, capture injuries, or cuts from inside bamboo cages. Stools soft & pale (from dry grain diet?). Coats mod. poor. They were weaker than Cayo S. animals, & large ad. ♂ weighed only 17 lbs. (looked like our ♂66). Kept separate in 6 cages, in groups caught in. In one cage, ad. ♀ gr. ^{ad.} ♂. Several ♀♀ pregnant. In evening departed by train for Bareilly.


2 March 1962. Arrived Bareilly 0300. Met by Supta and Saroop, and we drove to Tanakpur. Supta then slept & we dawdled; finally underway and drove into hills to N., up Dhuleghat River. Hills start abruptly about 2 miles from Tanakpur. Arrived at forest station & found that control road traffic was in the other direction 0830-1230; we arrived 0930! So long wait & delay. / In forest on flat, I saw 8± fine langurs in trees. In Tanakpur we stayed in a Dak bungalow - rooms & rope beds but no bedding, water, or other conveniences. / I walked along road up riverside & observed birds. Purple sunbird evidently feeding young in hanging nest. Nest 1' off ground hanging from rock above. She returned every 2-5 min. Shiny black ♂ sometimes zoomed near. I also saw 7± Vireonellus on river shore. At one site a courtship, one turning around &

Journal

2 March 1962

Nr. Tanakpur, India

reversing close to other; some wing holding out (incidental?),
 + 2 attempts to mount, tho subordinate kept walking. The
 black of wings is black velvet; striking. Jungle crows,
 large hawk ^{singing high} (black + white barings, small, over wings from below;
 light areas near wingtips),

Forested slopes; trees to 70'. Finally road open + drove to point
 20 miles from Tanakpur, on shore of the wide (50 yds.) river. Much
 timber ^{cut} ~~sent~~ roughly to size, floated down river all day. Many
 Nepalese, carrying baskets on backs with tump line on head
 going along trail all day; few women. They ate brownish rice
 concoction on leaves for lunch. / We had gone up about 5 mi.
 past Poongiri dam site, where some blasting + rockwork. /
 Today trapper had taken 26 monkeys in morning. These were
 jammed into two sacks and one small cage (2' x 3' x 1 1/2').
 Trap site was on a 10' wide trail through forest on river
 bench, within ¹⁰⁰ ~~200~~ yds. of wheatfield. ^(?) / Across river on Nepal
 side I saw 8 ± rheas in alder-like trees on river bench, in
 trees 6' to 20' up; apparently new small leaves. All said very
 drastic punishments for catching monkeys in Nepal. Ehta.
 photo of area; also of go. langurs over house roof, + trapping
 site on trail. / Logging mostly of Sal, which has straight
 trunk + conifer-like bark. This sawed into timber of various
 sizes, some 10" x 16" x 20; by hand. Saw shaped  ^{- main handle}
 about 8' long. / We reached trap (the usual net; corn bait)
 at 3 p.m., + had no time to watch. So returned to base camp
 + dawdled over chapatties, + finally underway back toward
 Tanakpur. But a truck stuck on road, so we sat for 2 hours.

Journal

2 March 1962

Nri Tanakpur, U. P., India

Finally I found that truck had broken tie rod only, & got driver to back up a few feet so that our little car could get past. So on back to Tanakpur in dark. | Area cleaner, animals healthier, air cooler, all greener, than at Mailani. || Trappers had taken about 60 monkeys in the hills here before today, starting Feb. 26, & these still held in bamboo cages. We had brought the 26 back in about 5 sacks today. Gupta told me that about 50 ^{had} ~~had~~ been taken at Palia, on railroad above Mailani and Kureja, & these were being held at Mailani. | Shortage of cages at Tanakpur, so animals crowded.

3 March 1962. Prepared to send monkeys to Delhi. More than 60 held, some since Feb. 26, in bamboo cages. One group 9[±] cages in roofless remains of a shack about 12' square, where all in sun until noon, & some long after. Corn thrown into cages only food; mixed with excrement, urine, on ground below cages. One ♀ nearly dead; not removed until noon, at my insistence. Another had skull 2 sq. in. exposed; released at my request. Many had bad cuts. I was told 20 more caught one of 2 March; these were kept in sacks until about 2 p.m. today, when new cages secured; these animals sweat-soaked, & very thirsty. Wasted most of day waiting for Gupta's car, which had gone 10 miles for cages. I wanted to go to Corbett Park; Dhawan had said this simple & easily done from Tanakpur. But Gupta & others did not know the place or how to get there. We hired a truck, loaded 131 monkeys in 13 cages, & drove through night to Delhi. About 12 stops for toll station and road controls, & several more for tea,

Journal

March 4, 1962.

Delhi, India

food, or talk. So long journey; about 15 hours for 180 mi. / On leaving T., near Jagraw bridge, I saw two or Holcus gallus, with several apparent ♀♀, at edge road near river bed. / On outskirts of Delhi, 100± Eggs on ground at one site, perhaps a dump. / at Delhi put Tanakpur monkeys in ^{big} cages; many in poor condition. The ^{Polia} animals (taken Feb. 25 - Mar. 1 and held at Mailani) arrived yesterday and had many old and decrepit. Actually monkeys I brought at 8 a.m. not taken from small cages until about 4 p.m. / Given many promises by Mr. Kohli that we would examine & sort the animals tomorrow. Delhi

March 5, 1962. Ready for monkey sorting at 8 a.m. Not able to get any help until about 10:30, when finally drove men to it. Mr. Kohli arrived 11 a.m. In two hours we got two cages (22 monkeys resultant) selected, & another man removed those under 5 lbs. from other cages. Then all help quit for lunch. Very slow going, though help and idle watchers abundant once we got underway. / a few free-lance monkeys on the farm, running free & over tops cages. In last day at least two small ones have escaped & have been chased & caught by hand. No nets or similar catching devices. The adults seem much more placid & easily driven to one place or another than Cayo S. monkeys. Rejected about 35% of first two cages from Hanat Tanakpur, mainly for old age. Kept some with well-worn molars as mammas & repro. organs seemed good.

Journal

5 March 1962

Delhi, India

Monkeys shifted cage to cage with no cleaning between save sweeping. Upper shelves soaked $\frac{1}{4}$ " thick with old excrement before some monkeys put in. / Men helping to sort had quit at 12:45; then they did other job or stood around, so no more action on my job until 2 p.m. Finished sorting only those brought from Tanahpur.

Delhi

6 March 1962. The men promising to start sorting monkeys at 0900 showed up at 0930 and 1030, but with some flunkys I got started at 0930. Sorted Palia Range monkeys. Many old, or cut up by wounds, so got only 24 out of 56 animals. These marked with clippings of hair on crown. Supposedly from 4 trappers, but were in 5 cages here. / Total held now 108, from 3 localities (Mailani-Kuriga; Palia Range; Tanahpur area). 5-5-6 lbs., 2 ♂♂ 4♀♀; 7-12 lbs., 11 ♂♂ 18♀♀; adults, 15 ♂♂ 58♀♀.

Thus, capture of those 5-12 lbs., - all w/o complete dentition - relatively poor. / The 3 biggest ♂♂ from Mailani were put, with ♀♀, in one cage yesterday. Man in charge said they would get along all right after $\frac{1}{2}$ hr. Result, two two severely wounded & weak, rejected; the "winner" had gash on arm. Another big ♂ repeatedly attacked by ♀ - after wounded? - and in bad shape, so removed. Yesterday ♀ ate aborted infant; placenta first, then cord, mason-
oni-like. ^{Calix still 8 a.m. 8 Feb. Mar. 1} Also one born alive in cage from Tanahpur.

7 March 1962. ~~Business~~ Checked monkeys in cages. Big ♂ in one cage, wounded yesterday, had not been removed; dead in cage & not out by 0930. / Visited Mr. Rai (H.R.?) senior at the Vito animal farm in Old Delhi. Several seen, only partly walked.

Journal

7 March 1962

Delhi, India

Poultry + vegetable growing in back parts. Neat clean appearance. Five sheds about 30' x 60' used for cages to hold monkeys. Another shed for hospital, + another for isolation. A man full time to doctor sick; he was giving terramycin in drinking water. Some with ^{diarrhea} ~~diarrhea~~ he was giving chloromycetin. Two near white yearlings, with normal eyes, in one cage; a golden rhesus in another. Rhesus from Assam look different - redder; longer face; Formosa-macaque-like? Holding cages about 8' wide, 12' long, 7' high - larger than at Patterson. Some had large exercise wheel (Patterson has metal-rod swings). But cage frame of pipe (Patterson's of wood), with cyclone-type wire. No shelves to hold dirt + feces. Some had mesh wire platform for monkeys to sit on. Handling was much gentler than at Pattersons; ^{coaxed} ~~coaxed~~ animals, rather than jabbed + shouted at. Sorting cage metal too, with vertical small rods sides so visibility good. Shipping crates similar to P. except burlap put over top + back (in winter, to protect from San London cold). In separate shed, about 12 cages with 8 monkeys each in individual compartments, for Lelake (?). Each monkey had small chain with numbered brass disk around neck. Rai said for such shipments each monkey is put in individual clean bag as caught, then kept separate from others. Date, place, time of each capture recorded. Rai said now most his monkeys come from Bengal, tho bought in many places. Vita has several men who go out + buy from traps - pens, so they do not deal through contractor as P. does. (But happens not on salary, the buyers are.) Rai is Indian, who

Journal

7 March 1962

Delhi, India

taught at university in Bombay (specialty; oysters), & is graduate of Columbia. The family has various other enterprises - roofing, composition building blocks, brushes. / Separate office on Allpore Road near center town, & not far from his home (where he gave me tea & introduced wife). He is ^{alternate} member of Transportation of Live Animals Sectional Committee, of Indian Standards Institute, his son M.S. being regular member. Son now on trip investigating vermet procurement. Altogether, a much more educated people to deal with than at Patterson Co. To Malaya

8 March 1962. Took BOAC flight 716 for Kuala Lumpur; departed 3 hrs. late. Himalaya peaks visible in range to N. for about one hour of flight. Ground below had dry brown look, with various branches of meandering Ganges and other rivers, with little visible cultivation or woodland from in 35000 ft. Passed over Calcutta. Saw mouths of Ganges, again, ^{very} flat country, & not green but muddy. Landed at Bangalore, where some greener, but rice paddies which surround city all brown & dry appearing. 95°F. here! Then on across bay & down W. coast of Malaya. In north, many steep-sided islands off W. coast. Mainland hilly, with thick green forests. Landed at dusk & went to Federal Hotel.

9 March 1962. Visited USAMRU (Army Med. Res. Unit), in buildings of IMR (Inst. for Med. Research) in K.L. Good but old buildings in well kept grounds. Here met Lt. Col. Baker, bacteriologist, in charge of US Army Med. Res. Unit (USAMRU). They had 3 Tupia in 8' sq. cage on roof, but no breeding success. I talked with Dr. Lin Boohitt, who had kept Tupia and had

Journal

9 March 1962.

Delhi, India

had seen *Hendrickson's* *anuridis*. He said *T. glis* not in deep forest but at edge, in shrubs + gardens. Many in some places in Lake Gardens. The smaller *T. minor* in forest, & rarely seen. Pairs territorial and made noise when men or other shrews approached. ~~Hendrickson~~ He suggested a 9' x 9' cage, outdoors with roof, nest drops, & little disturbance. Activity mostly morning and evening. He had two litters in 3' x 3' x 2' cage, but ~~most~~ young eaten. Cages of Hendrickson about 5' x 4'. Mangrove is one habitat of *T. glis*. Weather here: wet, ^{test} Nov. to Feb., but rain all yr. at K. & on W. coast. Now drier season; NE monsoon. No info. tabulated on breeding season or age *Tupaia*, but many raw records of post-n. exams which show embryo size. *T. glis* does not go far up trees; usually on ground. I visited Dr. Don Eyles of Far Eastern Research Unit, NIH. He recently got 50 rhinos from Veto, with fast service. They also had obtained monkeys from Wood Warts in Bangladesh, and from S. Mujibullah, Box 137, Ramna Dacca, Pakistan. He also had several addresses of other ^{animal} dealers in Pakistan. Dr. Warren had met Mujibullah, & they thought him reliable (A.R. Rai had said they had some business there E. Pakistan but had found dealers unreliable). I saw about 15 species of monkeys held in small cages. Apparently 3 species of langurs here, + *M. ius* and *munstrinus*. Met Elliott McClure, who worked mostly with birds and bird parasites. Red haired; about 50 yrs. Formerly 8 yrs. in Japan, & here about 3. Excellent knowledge Malay birds, & much mammal info too. Also met Oliver Milton, free-lance big game investigator, who now studying rhinos, of which probably has

Journal

9 March 1962

Delhi, India

than 50 in Malaya. (He had been in Burma & Africa for long periods). Had dinner with McClure, Baker, & Milton.

10 March 1962, Saturday. In early morning went with McClure to forest at about 2000 ft. about 22 miles from K.h. About 200 yds. from road was tall ^{tree} ~~jungle~~ with aluminum ladder fastened to it; we climbed up ladder to platform 120 ft. above ground, where fine view of surrounding jungle & across ~~the~~ to opposite forested slopes. About 700 acres here supposedly preserved from cutting. Stayed 0630 to 1130. Saw rhinoceros hornbill, minivets, barbets, leaf-birds, & many others. Heard argus pheasant. About 9 a.m. we saw a small group of pig-tailed macaques in tree about 200 yds. off. They were over 100' up in trees, feeding ^(on fruit?). One also broke off & stripped a twig. Two females carried small young, prob. under 1 month old. At least 2 1-2 yr. olds in group. ~~Probably~~ Probably at least 7 counting infers. after 1/2 hr. they moved to end branch & to adjacent tree. no calls. We had heard white-banded gibbons calling before ascending tree, but saw none. McClure thought there were 5 gps. in the area, about 5 per group, each gp. with one adult male. He also thought that both sexes called. We also heard rainy call at times; a wailing, rising & falling, but saw none. A week previously he saw two at close range from platform. / George Schaller had been here about Jan. 5, 1960, when gibbons fairly common & calling all day; now less, apparently. / Wyatt-Smith is Malayan expert on trees, apparently, & helped choose this platform site. / Fewer epiphytes than Barro Colorado Is. We saw only two lizards; a 3' monitor about 100' up in one tree, & a possible Dracon volans (saw only head). Returned to K.h. No

Journal

10 March 1962 Sunday N. Kuala Lumpur, Malaya
 dead animals on road (McClure says rarely seen) as in
 Canal Zone. / I visited Univ. of Malaya, which has several
 modern new buildings & is building much more. Saw govt.
 dept. with Dr. Berry (land snail expert), acting head of dept.
 (Hendrickson absent). Howard, student of tree shrews, away for
 a few days. Having Hari Raya (Muslim holiday) now.

11 March 1962. With McClure, Milton, & about 45 others,
 drove $70 \pm$ mi. N. of K.L. to near Slim River, through a
 huge oil palm estate, to canal, then 2 mi. down canal to
 patch of forest. Here walked in forest & saw elephant tracks
 (old) and fresh tracks rhinos (probably 3-4 animals) and
 two rhino wallows, one ^{surely} ~~app~~ used today. Heard many jungle
 birds. Visibility poor among trees because of many small
 Bertram palms, which branch from base & fill up area
 between trees. Some 2-3' diam. trees topped for shade.
 Had short glimpses one monkey in tree. Many mangos on forest
 floor at some sites. Milton and others trying to get area
 of 19 sq. miles protected for rhinos. Returned to K.L. in
 evening. Rain about 5:30 p.m.

12 March 1962. Monday. Holiday (birthday of Sultan of Selangor).
 Visited Oliver Milton, who stays in govt. chalet, and who has had
 much field experience in Burma & Africa before coming here to
 work on rhino. He is involved in projected orang utan survey
 in Indonesia & Borneo (Sarawak), and he showed me long letters
 from Harold Coolidge and Barbara (Mrs. Tom) Harrison. Mrs. H.
 has project of raising baby orange & releasing in Bako
 National Park. She (& Tom) find acceptance of funds for an

Journal

12 March 1962

Kuala Lumpur, Malaya

orang study "unacceptable" if it involves bringing in outside man (such as biologist to study orang), as such would cost expensive on Sarawak Museum & forest dept. ability to do studies. Milton is supposed to start an orang survey soon, & funds available for one year, apparently (World Wildlife Fund; some N.Y. Zool. Soc. support).
 I suggested extensive survey first, ^(to find good study area) avoiding the Harau territory; then localized intensive study of ecology & life; then more intensive, survey of entire range, utilizing knowledge gained in steps 2. Intensive survey could be made by foreign investigator. / In afternoon went with McClure to Kuala Selangor, near mouth broad river S. north of Klang. A hill with lighthouse and radio tower there, & a rest house, surrounded by small preserve of widely spaced spreading large trees. Many birds, & about 50 *Presbytis* ^{crinitus} (crested; all dark gray). Monkeys included many soft tan infants. Moderately tame, tho few approachable to closer than 100 ft. Excellent place for making observational study, as good accommodations in rest house, fine view over sea, & picturesque river life nearby. McClure said this langur not common elsewhere. We also saw 4 atop roofs of houses at edge town. / Returned to K. L. Hard shower about 6 p.m. Had "satay" dinner at nearby town; bits of meat barbecued on small bamboo sticks.

13 March 1962. Travel arrangements to Dorca. Lunch with Col. Baker. / Met Orville Elliott at Univ. He has been here about 4 months on NSF grant ^{(under} ^{Howells} to Prof. ~~Holbert~~ of Harvard, Anthropology) to study tree shrews. Field obs observation was to be main method, but this difficult. An outdoor large cage in vegetation near Univ. was planned, but no specific plan or start. In

Journal

13 March 1962.

Kuala Lumpur, Malaya

cages he had about 20 prs. T. glis, + 2 or 3 T. minor. Some pairs in 3' cube cages with cardboard-box shutter. Others in 20" x 20" x 16" cages with 16" wheel. One wheel had counter; Registered ^{Veeder-Root, Dundee} many 1000 revolutions/day. Some did not use wheel; others learned to use it ~~and~~ ^{quickly}. Usually 2 nest boxes 1 cage. There about 4" x 6" x 10," maronite with wood top - bottom, hinged front, + a maronite (lgt.?) inside. (Hendrickson had bred ^{some} in 3' cube cages). No evidence breeding activity yet. Food - various fruits, plus food balls (Farex inf. food, cod liver oil, egg, honey, + other ingredients). Occasional cockroaches or other insects; trying to raise meal worms for them. | Elliott ^{had been} ~~formerly~~ two years at Roscoe Jackson Lab, working on dogs. He had not been anthropologist as undergraduate. He seemed to have gathered almost no concrete data so far, + not to have any practical plan in mind. He had about \$3000 worth of motion picture equipment but had only "tried it out." Much difficulty getting his equipment in. | at first trip Hamell had accompanied him, + had also visited Sarawak. Elliott had met Tom Harrison + corresponded with him too, + T. H. had seemed favorable to Tupais work in Sarawak. | Elliott thought that T. glis through forest, not just on edge. He had seen up to 15' above ground. Most (?) observation was in Lake Gardens, where lowland bottomed small canyon ran through wooded area. Woods consisted of mixed hardwoods, + palms. No systematic trapping study started, + he seemed to have no idea of the possibilities. He had bushy beard + fat paunch, + seemed not too energetic. He also considered preserving organs, but had apparently not started. Altogether,

Journal

13 March 1962

Kuala Lumpur, Malaya

a quiet friendly chap, but not likely to produce much. Must be bright, or Howells would not have sent him. He seemed to have no particular idea to foster; only to record data. No apparent strong interest in other local ^{primates} ~~animals~~. / I had dinner with Hinton & Mary Baker, & told them of Puerto Rico work. They seem to be most interested in *Leptospiraxis* at present. Mrs. B. is in charge of the lepto. lab. / In evening took train to Singapore.

14 March 1962. Arrived Singapore about 8 a.m. & was met by J. L. Harrison, who has written most about Malayan mammals. He is especially interested in ~~the~~ rats. After the war he worked for years with Andy & IMR on *Trionyx* and mammals. Has written perhaps 50 papers on Malay mammals, & related subjects. He said *T. minor* in dense forest, while *T. glis* at edge (same as Lim Boo-Liat), and that *Ptilocercus* is nocturnal. *Minor* probably higher in trees than *glis*, too. He said *T. glis* occurred in the fern - ~~grass~~ ^{shrub} mixture about 4' high that covered hills back of his house. / Harrison now teaches at Nanyang University, a Chinese university of modern construction and over 2000 students; private univ. Before coming there he was about 3 years in Queensland, & before that at Univ. Malaya (in Singapore). He has Chinese wife. I spent half day with him at Nanyang. Then he took me on tour of Singapore. In the Botanic Gardens we saw one group of 40± *Macaca erin*. These were fed by people, & newspaper cover of peanuts were sold for this purpose. These most gentler and smaller than *heros*. The long tails seldom

Journal

14 March 1962

Singapore, Malaya

held up high except when ^{threatened} ~~attacked~~ by others + reacting aggressively. In general Singapore well-manicured, with many govt. buildings + signs of military establishment. But no dense Chinese hustle as in Hong Kong. Rather a dull town. / ^{On} ~~One~~ ^{Rochor(?) Road?} street in market area, we visited 3 animal shops. There held cockatoos, lorries, finches, parrots, mynahs, + other birds in crowded dirty cages. Also jungle cat, civet, a bear, about 3 gibbons, 10± M. nemestrinus, 10± M. everetti, squirrels, + others. Poor dark dirty conditions. Here occasionally an orang ^{utan}, or siamang, ^{H. said: / Had home} ~~was told~~.

Chinese dinner with Harrison, then took train back to Kuala Lumpur.

15 March 1962. Spent most of day with ^{Oroville} ~~Oroville~~ Elliott, +

visited Tupaia area in Lake Gardens. I saw at least two briefly. One ran 10±' on open lawn at forest edge. People in park an obstacle to study there. / Arranged thru Col. Baker for Lim Boo-Liat to obtain + send to me some Tupaia, in Puerto Rico. We will try several in one metal box this time, via Pacific on jet. Boo-Liat seems to be best man for knowing where Tupaia has been trapped. He now is working on key to bats, + distribution + ecological notes, for Malaya. Also working on a Rattus problems. / Had dinner with Mr. Cluer, + John Wyatt-Smith. Last is with Dept. of Forests, + authority on Malay trees, but much interested in wildlife. He is said he had pet dark-banded gibbon; there occur in northern Malaya. He also said there were orang-utans in North Borneo, + that he had forest dept. friends there who could help a biologist. He also thought Bako Natl Park in Sarawak was unsuited to the establishment of orang utans. Seemed well acquainted with Mt. ^{Tina-} ~~Tana-~~

Journal

15 March 1962

Kuala Lumpur, Malaya

balu area. Tall, lean, British, & said to be infatigable in field.

16 March 1962. Scheduled to ~~leave~~^{leave} by plane in morning for Bangkok, Calcutta, Dacca, but flight cancelled. The airline then sent us in afternoon to Singapore, to stay night and leave next morning for Bangkok on Cathay Pacific.

17 March 1962. Flew over E. Malaya. East ~~coast~~ coast had many long sand beaches, some muddy meandering rivers, several offshore small islands. Sea calm, & muddy until 1/2 mile out. Saw no coral reefs. Many great areas of forested mountains with no rock or bare ground visible. Cultivated fields near a NE port. Then over ^{Gulf} Bay of Siam; blue & calm. Near coast of Thailand several wooded islands surrounded by clear blue water. Mainland brown, flat, covered with diked paddies. Long straight narrow muddy canals. Green trees only around ^{houses} ~~houses~~. Arrived Bangkok about 1030. Waited for Air France plane to Calcutta. / O. Elliott told me that he had seen pig-tailed macaques in Lake Baidens on several occasions. He usually detected Tupaia by hearing them first. / I saw 20 ± M. irus on grounds alongside of Majestic Hotel, across from railroad station. At least one had small infant, probably < 1 month old. Several at Singapore also had small infants, & at least ^{one} there apparently pregnant. / To Calcutta on AF in evening. Stayed at airport rest house. E. Pakistan

18 March 1962. To Dacca on PIA in morning. Flight over diked paddies, meandering muddy rivers. Fairly green ground (the dry season now). But all cultivated & flat. / Much time in entry, due currency control, forms, & simply leaving my passport to near last, apparently intentionally. / Telephoned

Journal

18 March 1962

Dacca, E. Pakistan

Syed Mujibullah, P.O. Box 137, Ramna, Dacca, monkey-dealer. He came in old jeep. A rather rough-looking betel-chewing man, formerly of Calcutta. No beard, turban, or hat. He installed me in hotel & we lunched on rice, chicken & mutton curry. He said animals his only business, & that he started monkey business in Pakistan. He has shipped to Gluck, to Pfizer, Lederle, & other labs. He said about 14 separate camps where monkeys bought, held, & shipped to Dacca. Sometimes sent by chartered plane. Method of catch; sleeping place of monkeys found. In morning monkeys to water. Near water net put around a piece of jungle or artificial jungle. Men help guide monkeys into netted area. Net may be "2000 yards" long, & sev'l yards high. Monkeys driven into net, & over 100 often taken ⁱⁿ from one catch. Dr. Warren of IMR has witnessed this, seen habitat, & made monkey malaria studies in E. Pakistan. Dr. Mack "from K.L. had also been here. Monkeys from forests, not towns & villages, so take bait poorly. / Mr. Davis of Shamrock Farms Inc., R.D. 2, Middletown, N.Y., is dealer who buys from M. "Dr. Hapwood" of Washington has also bought. Shipping via PAA or PIA; in N.Y. within 24 hours of shipping. Fewer restrictions than India, so no "certificate of need" required, JM can trap anywhere in Pakistan, and can exceed numbers per crate allowed in India, & can send smaller monkeys. N.Y. price about \$28 for 4-8 lb. monkeys. / Births Feb. to May here. Chittagong one of trapping centers; Burma & Assam border too. / He said recently sold king cobra to N.Y. Zoo for about \$1500.

Journal

18 March 1962

Dacca, Pakistan.

He offered to introduce me to other monkey dealers in Dacca. He said Mr. Rankin, commerce officer of U.S. Embassy, knew about his company. Not long ago M. in New York a week, & he expects to go again in April. He said he could supply certain sex & age from certain locality, & had done this for some people (Dr. Warren?). He also sells to Henry Trefflich, 228 Fulton St., New York 7. The other Dacca dealers, who have no farm as yet, are: Mr Hafizallah, Mahi Corp., 12 Sin Ah sanullah Rd. (Ah sanmanzu), Dacca 1. Teleph. 3030. / To Davis (Mujibullah) he sends about 500/mo. at maximum he has available \$3000^{monks} per month. He also confided that the jet freight rate for 500 kg. & over (300 monkeys) was much less than the B.O.A.C. rate from India. In part due to 20% surcharge in India for animal shipments. He knew Bai & Patterson companies. He said that Bai had tried to discredit Pakistan monkeys by personal talks. At another time it was published that Pakistan monkeys had malaria (they had ridden with monkeys from Kuala Lumpur), but Warren & others had found little more later. M. taken blood slides monthly for Dr. Warren. He said he has also tried to infect monkeys with malaria from mosquitoes. He said he has hybridized ~~Man~~ rhesus with stump-tail without great difficulty (kept or away from & for a time), and the hybrid had stump-tail face but rhesus tail. He claimed little to have had no difficulties in jet shipments, & could reach San Francisco in 20 hours, N.Y. in 24 hours. He had also had bad experiences with Glueck, including one where D. had told him to ship too few cages, & another where D. claimed a large portion dead and checkups with PAA and SPCA gave different report.

Journal

18 March 1962

Dacca, E. Pakistan

I visited the monkey farm. Very run down + small compared to Patterson and Vito. Near EPRTC (bus line) Stage No. 6, Holy Cross College. M. ^{said} ~~said~~ he had fire there about one month ago, + nearly all burned. The monkeys were in 7' x 7' cages, + these (500±) were released, + later about 200 returned. Whole farm area about 150' by 200', surrounded by other dwellings + other buildings. Present cages were wooden sea-shipping crates, as some shipped by sea still. Air shipment cages similar to Patterson's, but without the drawer-type feeding trays. He said he had shipped 64 pregnant females ^(2 shipments) ~~to S. Asia~~ last year, + had no adverse report. Food: rolled rice, fruit, gram + similar grains, sweet potatoes. He knew about "bael" fruit. At present he had about 100 monkeys, all adults. When sick, released, except good animals being readied for shipment given terramycin. SPCA in London apparently inspects monkeys + medicates if necessary. / Collecting areas all 3-400 miles from here. Some require boat transportation part of distance, but mostly rail transport. / Both an ~~Indian~~ ^{Indian} Airlines man + hotel man ^{told me, without} ~~voluntarily~~ questioning, that M. was well known and from a good family. / M. took me to house of a ^(in charge gort. research) Dr. ?. He was about 250 lbs. + said little, but lazily sat. We had the usual ~~for~~ peanuts + fried tidbits, + tea. After we left I was told he was in charge of scientific + industrial research here, had written many scientific papers, + been ^{leader} ~~chair~~ of various committees + delegations. Both seemed to think there was no great difficulty in bringing in scientific equipment, + ~~Warren~~ Warren had brought microscope and similar items. / In contrast to India, British, German, + other foreign cars here. / Mujib. said that about 1956 representative drug companies came to Pak. + inquired about obtain-

Journal

18 March 1962

Dacca, Pakistan

ing rhesus, but none available. He then had gone to Calcutta to see what rhesus was, to Delhi to see (incognito) the Patterson & Vito farms, and to Lucknow vicinity to find trappers. He brought ^{several} trappers to Pakistan and they trapped monkeys for him. So, according to M., he started rhesus business in Pakistan. / Pakistanis do not drink, but with aid of my passport they secured 3 bottles of Pakistan (London brand) beer for me (flat & apparently not alcoholic). M. chewed betel nut, so he could not talk without a quick trip to bathroom to spit.

19 March 1962. Visited Edward^O Rankin, Commercial Officer in U.S. consulate. He said Mujib. had good reputation, tho some difficulty with Asiatic Animal Imports over loss of monkeys. He showed me World Trade Directory report, of April 1960, concerning S. Mujib. In business since 1951. Branch in Chittagong. 6 camps: Sylhet, Mymensingh, Rajshahi, Cox's Bazar, Ramgarh, & Monochshari (last 2 Chittagong, Hill Tracts). Four travelling organizers. Rankin thought / From maps I saw that Chittagong hills was principal low-population forest area in E. Pakistan. (Rice, jute, sugarcane main crops elsewhere). Another forest area at ^{river} mouth in SW Pakistan, where R. said dangerous animals (& M. said some rhesus monkeys). / M. had promised to give me maps of trapping areas, but did not; he said he had given one to ^{Dr.} Warren. / I visited SEATO cholera lab, where talked with Dr. Gordon & Stockard (Soper absent), but they ~~have~~ knew nothing of monkeys. Lab cooperative betw. U.K., Pak. (?), & U.S. (through NIH). Main problems water & susceptibility. Located on 3 floors of (one wing) of large concrete building, beyond airport site. / Visited Dr. Cassanos of

Journal

19 March 1962

Dacca, E. Pakistan

U.S.-AID (floor below U.S. Consulate). He had traveled much in E. & W. Pakistan but knew little of wildlife and had not heard of Mujibullah or other dealers. Mostly interested in water, cholera, & malaria. But offered cooperation & some transportation in Chittagong Hills area. Said research projects done thru govt. should have no difficulty, & no special import problems. The vet, W.H. Dieterich (Consultant, U.S.-AID, Adamjee Cant, Motighel, Dacca) absent, tho but should have knowledge condition monkeys in shipments. / I visited office of Mujibullah. ~~to~~ Crowded between stores, about 10' wide. Sign at front said S. Mujibullah, Exporters, Jute Manufacturers & Monkeys, Collector of Wild Animals, Birds, & Reptiles. Dark inside; crowded; 3-4 desks, & men working on books. Largely export jute products & ~~chemical~~ ^{medicinal} plant parts. He showed me newspaper picture of fire damage (December 1961). Said not rebuilding farm as expects soon to get land near airport for new farm. / I visited Akhter-Baman co., of which Rankin but not Mujibullah had told me. In 20' x 20' yard of quality residence ~~in~~ ^{on} crowded street, wood sea shipping crates with wire fronts, with 100± monkeys. About 12 3-4 lbs. in one air shipment crate. Mostly adults in fair condition. The boss, a red eyed hotel owner of about 50, said shipping to Gluck, but stalled when asked for names other customers. Formerly to Trefflich, apparently. No atmosphere cordiality, neatness, or efficiency. / Then I visited Mahi Corp., Mr. Hafizallah. Formerly worked for M.; ~~but~~ spoke good English; handsome. Had no monkeys yet

Journal

19 March 1962

Dacca, Pakistan

but apparently planning to start. Said Manhattan Sales Corp. of N.Y. had offered to be agent. No customers yet, or credit references (exc. bank). In house yard about 30'x60' had 20± monkey^{sea} shipping crates. / Visited PIA office. They anxious to know about monkey shipments. In May will have jet flights Dacca to N.Y. without transshipment, arriving in about 23 hours. In some jets (Boeing 720?) can ship up to 40 crates monkeys in passenger planes, so small shipments no problem. (At Deats lab I had heard that low rates freight Dacca to London ~~was~~ so planes not return^{partly} empty). / Again visited monkey farm. Two sheds, bamboo pole construction, about 20'x60'. One had 24 ocean shipping crates, & 70± adult males (an order for 100 ad. ♂♂). Not overaged, but lean & coats dull (no oil in diet). Some had severe cuts. Among sick, some stump-tailed macaques. One adult on ground outside cages, dying. Roofs of bamboo matting, except for one, now of sheet metal. Ocean shipping cages 2'x3'x6' approx, with wire in fronts only. / I took evening plane to Calcutta..

20 March 1962. Took 0630 plane for Delhi, arriving about 10 a.m. It appeared that every available acre under cultivation on whole flight, & no ~~blue~~^{overt} change in crops or greenness (faint). Small diked plots all; no tractor farming apparent. / At Zoo farm they were holding about 75 from Isupta at Tanakpur. In addition Mr. Jagdish had been to an area in Punjab, about 100 mi. from Delhi, & reported good trapping there, & had

Journal

20 March 1962

New Delhi, India

brought back 3 ad. ♀♀. He told me it was easy to go by bus, leaving this afternoon. But, ^{when Dhanan told him to go,} he showed considerable reluctance and thought the trip would take 24 hours. I received cable from Nagel saying 85 monkeys arrived, minus 11 ♀♀ 6 or 7 dead, + 2 each dying; that diarrhea rampant, + that apparent starvation + thirst in cages. I about 50 monkeys from Tanahpur, ^{sent} ~~captured~~ after March 8, in cages; many sick and diarrhea severe among them. I called veterinarian + had a few of worst removed. The rest will be given 3 day sulfa treatment + any with diarrhea rejected.

21 March 1962. While I was in Malaya, Mr. Jagdish had scouted area near Karnal, about 110 mi. N. of Delhi, had arranged trappers there, + reported it good, with plenty monkeys all sizes. He was sent again afternoon of 20 March. By telephone this aft reported he had not relocated the trappers. But one of them turned ^{up} ~~up~~ at zoo farm, so with "Johnny" (a sort of office boy) I went on rickety bus to Karnal, + met Jagdish, + we found where trappers were.

22 March 1962. Set out on 0610 bus for Pipli, where trappers were camped. Thence via tonga (horse cart) to Lodwa. Then walked about 3 miles across ~~dry~~ fields to tiny village of Bani. At edge a small lake, and 100 yd. diam. area of 20' palms, shorter palms, + thick 5' grass + bushes. They set up two nets about 5' high, in all about 100' long, at edge lake ^{at edge} ~~opposite~~ of bare area. Then beat bushes on opposite side with sticks. One female apparently only animal present; they had said 10-12 there. Now they said someone else had trapped them. So walked back to Lodwa,

Journal

Punjab

22 March 1962

Nr. Karnal, India

Jogagri (?)
 took bus to Jagadhri, then cycle rickshaw about 3 mi. N. to Jagadhri Forest (Mr. Jagdish said). Here scattered mixed broadleaves to 20' high, + 6' thick bushes in various clumps. Barley field alongside, + sugar cane a few 100 ft. away. I saw about 10 adults and 2 yrl. feeding on ground, apparently on sugar cane. But as soon as the trappers arrived they went dashing into the bush with their poles, + all monkeys were frightened into hiding. These trees part of a long serious belt, + doubtless many monkeys there, but seemed too thick for this type of catching. I told men to try to catch, + to try again tomorrow. Johnny instructed to return tomorrow to inspect monkeys, record captures, and report to Mr. Dhawan. Jagdish + I returned to Karnal, thence to Delhi via bus. / Another fiasco - whatever required was to find one good catchable group with high proportion 5-10 lbs.; J. had only excuse, promise, optimism, + repetition of what he said trappers had told him. Obviously trappers are an unreliable treacherous lot.

23 March 1962 : at zoo farm, Delhi, saw that many of my caged monkeys from Tanolpur had severe diarrhea, one lying dead in cage; however, 5 specifically ordered out by vet. had been removed. Flies by thousands in cages. / Asked Dhawan, by telephone, to contact Gupta + have him trap ~~at~~ new location (Calcutta region). / Spent evening with M.S. Rai and father at latter's home. They expect to be able to ship monkeys

Journal

23 March 1962

Delhi, India

eyes lay jet within several days. They had tried to get permission to ~~trap~~ obtain monkeys in Nepal, with no success.

24 March 1962. Spent most of day getting camera & transponder out of customs, enquiring into monkey shipping flight, & looking return trip to U.S. via Zurich. Spent evening with ^{Capt.} Dr. Subramanian, the army veterinarian who helps with Patterson's monkeys.

25 March 1962. Took morning train to Bharatpur, where Dr. Sali Alim, ornithologist of Bombay, and several students and cooperator were banding migratory birds in Ghana Sanctuary. There was duck shooting during about 3 months season in this area, of about 10 sq. miles. Hunting rights belonged to ^{Maharaja} ~~Najara~~ of Bharatpur. General area had appearance of Colorado River region in Calif., or lower Rio Grande valley in Texas: flat, mesquite & thorn scrub, shallow weedy lakes. Many anhinga, small cormorants, kingfisher, storks, ibis, ducks, plovers, vultures, & other birds; a finer display. But ~~some~~ ^{some} buffalo grazing allowed in the preserve, & ~~others~~ had permits to take wood, so not a "sanctuary" except for breeding water fowl. Good rest house & bungalows available here. The group stayed in a guest house near the palace of the Maharaja. In late afternoon we went to area of 10' bushes near wheatfields & put up about 12 large mist nets near bush roosts. Flocks of 1000 and more Passer in grain fields, rising, falling, flapping. These headed for bush & tree roosts in evening, so that sky full of them - perhaps 1/2 million or more

Journal

India

25 March 1962

Bharatpur, Rajasthan,

in one square mile (in air). about 250 taken in nets - mostly P. hispaniolensis, but also P. d. pakiri and P. d. indicus. These banded in evening, + released. / Ali friendly energetic small man about 60 yrs. - a self-made ornithologist, and the only ^{important} one in India (so save ^{perhaps} Biswas at Calcutta). / We saw one nilgai and one black buck on the preserve. Spotted deer also present. But ^{water} buffalo competition probably hard on there. Fine area for study of various species, especially water birds. We came on one group of 40+ ^{bengalensis} ~~byrs~~, feeding on a carcass by road. They seemed totally unafraid of car. Several fulvus mixed with the larger bengalensis, + a few Neophron. But no Torgos, though these were common in the sky. / Drongos, sunbirds, bulbuls, green pigeons, paroquets, & others common.

25 March 1962. Completed bird banding. Walked about to preserve birds & area. Departed on afternoon train for New Delhi, arriving about 1930. New Delhi

26 March 1962. About 0830 Dhawan phoned + said that some ^{monkeys} had arrived from Sitapur. Perhaps there were those in two ^{small} bamboo cages, which contained a few adults and many small monkeys, including one dead in cage. He also said that some to arrive from Jodhpur area ~~today~~. / The Sitapur monkeys had been sent by ^{Madam} ~~Manee~~ Begum + obviously were not of single groups or contained about 15 5 lb. monkeys each plus many 4 lbs. and no older, but decided to accept anyway. / Visited Garfield Bump and had dinner with him. He had been in India 3 1/2 years, obtaining francolin, pheasants, and other

Journal

26 March 1962.

Delhi, India

game birds for introduction into U.S. Good source info on much of India and problems travel, shipping, importing. ^{Much} difficulty with petty harassment by officials. / "Johnny" arrived from ~~the~~ Jagadhri area with only 9 monkeys. He reported groups small, about 7 in bunch, & that areas of several groups visited. Gupta reported sending monkeys from near Calcutta. / Some to be shipped given sulphur drug starting Mar. 25. Others will have for at least one day before shipment. / I again noted caked excrement on shelves & wood frames of cages. Also the sorting cage seemed never to have been cleaned & was also caked. / Again visited MS Rai & was given two pale monkeys (0707 - about 1 1/2 yrs. old). He said they have trapping permit in a large area of foothills near Ramnagar, & are not dependent on local contractors. The elder Rai said his men reported animals being taken from Mailani area to Tonakpur area to sell as T. monkeys.

To Zurich, Switz.

28 March 1962. Departed 0215 on PAA for Tehran, Ankara, Istanbul, Rome. Then Swissair to Geneva & Zurich. Beautiful flight up coast of Italy & thru alps, passing close to Mt. Blanc.

30 March 1962. Visited Prof. Adolph Schultze at Anthropol. Inst. He is to retire in a few weeks. He said that Hans Kummer & coworker had made study Hamadryas baboon (+ gelada) in Africa, & had found characteristics considerably different than in baboons studied by ^{DeVore} ~~Wood~~ & Washburn. Visited Prof. Heini Hediger at Zurich Zoo. They


Journal

30 March 1962

Zurich, Switzerland

had one infant gibbon born in captivity. Two ^{baby} ~~young~~ chimps in ape house. Otherwise little change in zoo since 1960 visit. / Freight flight with monkeys did not arrive 1600

31 March

as scheduled - finally arrived 0500 of 31 March. I boarded (Constellation) and accompanied to London, arriving 1030, with brief stop Frankfurt en route. Monkey area in plane about 7' high by 10' wide. Cages stacked thus in cross-section , so 3 rows. Two men spent most of time in flight in feeding + watering animals. They had removed dead adult ♀ in Beirut; a 4 lb. one near dead by Frankfurt, + ^{another} ~~another~~ dead in London. I asked animal man in plane if dead monkeys of Patterson shipment, or some of Vita also on board. He said "of course; Vita almost never has losses." / Area of monkeys seemed well ventilated & of suitable temperature. / At London airport animals unloaded into closed van, in cold wind. Taken to RSPCA building, where put in clean warmed room, cages cleaned, water given, and dog biscuit. The building well scrubbed and cleaning thorough, with new sawdust put in cage trays. Their records showed that one dead in cage 56 in our shipment of Feb. 11; O'Brien said Patterson told him that 12 were dead in N.Y. on that shipment. Today animals due to leave about 6 p.m. on seaboard for N.Y. I went to N.Y. on PAA flight 73, arriving about 1010 p.m. ^{at} 1 April 1962. Flights delayed by bad weather. Departed for on PAA flight 211 about 7 p.m. and arrived at San Juan about 11 p.m. ^{about 0800} / Monkey shipment arrived San Juan on April 4, almost 6 days in tran-

Journal

1 April 1962

San Juan, P.R.

(96 alive; 95 alive after 24 hrs.)

Site The shipment sent from Delhi on March 11 had arrived on the evening of March 17, 6½ days in transit, with 69 animals alive, of which 4 were apparently dying.

Addenda - Hardwar, near Dehra Dun, a holy place where rhesus monkeys said to be abundant and not disturbed.

Monkeys were installed on La Cueva & Guayacan Islands, nr. La Parguera, P.R. Start of colonies there.

End

C. B. Koford

1964

Journal

Galapagos, Ecuador

Journal - Galapagos Trip, 1964

6 January 1964.

San Juan, P.R., to Berkeley, Calif.

Departed San Juan 1000, Delta Air Lines via New Orleans to San Francisco.

Arrived 4:10 p.m. Went to Berkeley.

Berkeley, Calif

7 - 9 January 1964. Various meals + symposia with others of the Galapagos International Scientific Project, sponsored by Univ. of Calif. Extension, led by Dr. R. Usinger. Shopping + preparations.10 January 1964. With about 50 other members, boarded Calif. Maritime Academy training ship "Golden Bear" near Vallejo. We all bunked in one large compartment. Departed about 11 a.m.11 - 18 January 1964. Morning + afternoon symposia on board as we sailed S. We passed close by Guadalupe Is., said to be devastated by goats. A few dozen large trees on top, as seen from E. side. Birds at sea few: gulls at first, then shearwaters, fulmars, black-footed albatrosses (2 max.). Later boobies, tropic birds, jaegers, petrels. Occas. porpoises or flying fish, + one day many red crayfish-like crustaceans at surface. But usually none and seldom over a dozen birds in sight. ^{Jan. 17 and 18 and 19} + 6 and 17, stratus overcast.19 January 1964. We arrived at Galapagos Is. + cruised past Pocos Redonda, E. side Albemarle, W. side James + Duncan, to Academy Bay, arriving mid afternoon. Most were pleasantly surprised at quantity + greenness of vegetation on Albemarle + others. Many sea birds among islands, + we saw a few sea lions in sea.

Academy Bay, Indefatigable

20 January 1964. Unloaded ship at Academy Bay. The local aspect a jumble of small lava boulders bearing mixed tree growth + cactus stand with thick under cover. Mangroves on some

Journal - Galapagos

20 January 1964.

Academy Bay, Indefatigable

shoulineer. ~~Stratus~~ clouds at 500± ft. Cool morning, raining & breaking midday. The finches numerous & tame, as advertised; yellow warblers & mocking birds common. Some finches nesting. No hawks seen. Rather some flies, & some mosquitoes evening. A brief sprinkle in night.

21 January 1964. Official dedication of Charles Darwin station, with 2 members govt. junta of Ecuador present. Many speeches, much confusion. Talked with Bud Devine, - Roth, Argemeyere, Alf Kautsky, about farming, fishing, economics.

22 January 1964. Most of visitors left, leaving only scientists. Went skin diving near station; saw 3 kinds sea urchins, sea cucumbers, brittle stars, hood rayed starfish, many fish similar to Puerto Rico - pomacentrids, parrot fish, surgeon fish, butterfly fish. Took langosta, about 4 lbs.

23 January 1964. Helped with local fish & invertebrate collecting.

Journal - Galapagos Islands

21 January 1964

Academy Bay, Indefatigable

talked with Mr. ^{Dick} Roth, who has been here about 8 mos. and lives at Horneman's farm, about 800 ft. elev. He said now few potatoes because of blight. Coffee produced, but processing difficult. Has heard fish traps do not work well here. Much agric. area fenced. Introduced grasses planted, including pangola & elephant grass and - vin. Alf Kestdalen has ranch near Horneman's. Holstein dairy herd, & doing well. In drought fed banana stems, cut and thrown on ground. To clear ground, a vine (bean) used, & elephant grass in openings; there choke out other. Drought Jan. - July, 1963; resulted loss cattle & other feral. *Lantana* introd. by Conways 20-30 yrs. ago; not on Santa Cruz. *Chorizanthe* spreading. *Guava* too (offers cattle spread it?). Now more animals high on hills than before, when brush there. Dry areas least changed. *Miconia* replaced by mixture brush. Dry shore zone a buffer against spread of plants from other islands. *Hibiscus* mainly shore zone. Cattle - father of Castro introd. about 1933. Kestd. here 20 yrs. (28?). Pigs introd. about 1937; lived on at first. Eat roots *Pleis aquilar* (sp.?). Tushes larger now than before. ^{Burns} ~~Burns~~ & pigs & cattle had setback in drought yr., 1963. Dogs now rare on Santa Cruz.

22-23 January 1963. Skin diving, fish & invert. collecting, near Darwin Station. Bottom a jumble angular lava boulders, with no sea fans & rare corals. But schools surgeon fish, mullet, parrot fish, others - abundant fish. Caught large langosta 200 yds. off station landing. 3 common sea urchins; brittle stars common; anemones few; sponges abundant. Marine iguanas common.

Journal - Galapagos

22-23 January 1964

Academy Bay,
Indefatigable Is., Galapagos.

in station area. Apparent ad. ♂ or ♂ sit atop high rocks, as if territorial with harem. (Hendon Dawling studying there).

24 January 1964. Left 0730 on trip with John Henderson to La Fe to seek nests of tortoise. Boatmen David Balfour; tortoise guide Gilberto Moncayo. Saw sea turtle & several mantas of large size, at edge slider, about 1 mile offshore as we headed W. in 14' outboard. At 0835, stopped at La Torta, at W. end of a long cliff (barracones). Several sea lions lolled on islets (no small pups, but one half-sized). Brackish open pool 100 yds. back from shore, & a few goats there. Some brown with black withered & down forelegs; others black. Males large. Vegetation much beaten by goats near water hole; many trails, broken brush, but much green brush still. In higher ground, droppings goats & burros common, & occas. goat seen, but not within 50 yds. - many. Mostly concentrated near pool. We looked for tortoise nests for 1½ hrs., but found none, tho found droppings (old). Moncayo said most "la gente" does not know about this nesting ground, as La Fe is the well known place. Saw a Lasium flying back & forth over pond at 10 a.m. It had some object on back (leaf? young?); it landed in bush, but I could not find it. At 0940 departed La Torta - beautiful protected baylets & mangroves - and went on toward La Fe by outboard. Arrived 1110, going in through channel between breakers. Mangroves; some sand; but mostly black lava boulders on shoreline. A few tame sea lions on shore or in shallow waters. Amblyrhynchus common on

Journal-

24 January 1964.

La Fe, indefatigable, Galapagos Is.

shores; sometimes in groups $6 \pm$. Tidal range about 5' with $3/4$ gibbous moon. Some protected baylets. Old tortoise bones here & there, & very old whale skull. Mangroves cropped to brown line 6' up, by ~~lurriers~~^{or} & goats presumably. We started inland about 3 p.m., on boulder strewn level ground, among tree open-tias, croton, *Curatella* trees. Goat droppings everywhere - scarcely a meter of ground without, but presumably slow to decompose. A tortoise shell found 3 yrs. ago, & then old, still had plates on it. About $1/2$ mile inland, Monayo found nest with dead newly hatched young, overminified. Later I found, 14 meters from there, nest with fresh eggs - about 9, which Henderson excavated, photoed, & collected for hatching at station. Nest site on open ground, where some goat tracks, in red soil. Found by noting slightly raised spot with plastered appearance. Heard goats & *Curatella* at night near camp; saw none by day. Mod. buggy & 1 hr. rain at night.

25 January 1963. More search in area for tortoise nests.

Found on a trail an area of several old nests & empty old egg shells - evidently return to same site again & again. We found shell of killed female (cut plastron) with notch marks; M. said he marked it about 3 months ago. According to M., nests in slightly low flat zones with large spaces ($2' +$) between black lava boulders, & there, areas are limited. If freedom from overhead vegetation important, goats may improve cover for tortoise nesting. Mocking birds common & tame; many geospizids - one building nest between


Journal

25 January 1964.

La Fe, Indefatigable Is.

2 vertical sector pads. Yellow warbler + Myiarchus - type fly-catchers. H. saw 2 'goats' black, brown, mid morning. Walked back to shore landing + spent night; sprinkle of rain and mosquitoes.

26 January 1964. Skin diving at La Fe. Collected marine

algae. Saw several sharks with  tail + white tips 2 (or +) dorsal fins, one about 6' long. Schools various fish. Saw 12+ langostas in 1 hr. + took 3. They are as wary + fast as the Puerto Rican variety. Some coral heads on rocks, with one kind fine grained white coral. Balfour arrived, + we returned via outboard to C. Darwin station, arriving 12:15 p.m. / Allyn Smith said he saw a lone coyote-like dog not far from town. / At La Fe, mangrove browse live at about 6' in all species, including Cryptocarpus vines in trees.

27 January 1964. In afternoon walked up "old trail" toward Buena

Vista for 1 1/4 hrs. Increased vegetation after short rise. Trail one hour wide + rough with boulders in soil + mud; rather hard walking. Buena Vista said to be 1/2 mi. from Horneman's ranch, which is in rather lush area. Tortori area about 1 hr. E. then 3 N. of Horneman (Dr. Forsberg). No rain at Acad. Bay today.

28 January 1964. Group left for Town + Culpeper - Wenman trip.

Bad Devine on langostas at Acad. Bay. About 11000 lbs. tails per mo. per boat (6 men). One big boat has 30 men. Fishermen get 7 sucres / lb. (10 to \$1). About 100 employees total. Dred when taken; then to freezing plant at Acad. Bay, + by ship to Guayaquil. Said tunnel not poor as too much repair. Tapes ineffective. Tails 1/2 to 1 lb. each.

Journal

28 January 1964.

Academy Bay, Indefatigable Is.

Devine says illegal to fish within 1 mi. town (?). David Balfour + local boy Ralph later told me the big lobster boat is the Floreana, the shipping boat the Vilamit. Ralph said up to 9 sucres/ lb. paid for tails; formerly 5. Acre of ~~the~~ freezing plant on outside, -aris.

29 January 1964.

To Barrington Island, Galapagos

Departed 0740 on Balfour's ketch 'Lucent' for Barrington. Caught with trolling line 1 dolphin about 1/2 way over; hooked & lost another. Ralph said about 10 boats, mostly from Acad. Bay but some from Wreck Bay, fish for groupers, esp. Nov. to Easter. Get about 5000 lbs./yr. each. Salted in barrels; rinsed; dried, & sent to Guayaquil. Line fishing. At Barrington we saw 2 boats fishing; about 6 men on deck with hand lines as boat drifted beam to beam. Later these boats came into bay of Barrington, cut & salted their fish. They said fishing poor. We saw 2 boobies over & 2 goats on Barrington before landing. Cliffs of stratified thick lava; much opuntia over top. Small harbor very clear water & 2 small sand beaches with many sea lions. One will study the ^{sea lions} seals, & the goats. Brief skin dive showed some langostes in boulder tangle at bay edge of islet at mouth bay. Other fishes similar to Indefatigable area. No mangroves, but some green bushes near shore. Bureau & other shrubs mostly mostly gray & leafless. Goat droppings & tracks everywhere, & several skeleton goats in bay area. About 1730 I surveyed hills & saw 7 goats, all adults, not over 2 in groups. All black or brown. Thorny low green bush nr. shore little cropped, "mangante" - leaved bush brown line at 3'; & Cryptocarpus eaten to near leaflessness wherever it grew. Fisherman came to beach to seine for bait; sea lion almost caught in net - was in loop but jumped.


Journal

29 January 1964.

Barrington Is. Galapagos

out. Some small sea urchins on open coast just outside bay to N. of beach. / About 50 sea lions using 50 yd. long sand beach (S. of the 2), with a bull calling much of time, on into night. Some small pups!

30 January 1964. Sea lion bark all night. "Lucas" returned to Academy Bay.

I walked to top ridge N. of beaches + out it to W., then back. Saw spindly brown-barked cactus pods chewed through , apparently to get center $3/4$ " pulp. Injured trunk operculum also chewed at edges surface layers, enlarging wound. Some *bursera* trunk had bark bitten or scraped off in 4" x 8" section near base, as if by goats. Most beard lichens above 5', but not sure goat effect.

Scratched hollows in soft soil common; goats roll or dust there? /

About 7 a.m., black + brown ^{goats} ad.; fed at green shrubs at shore S. side

bay, then walked NW bet' behind camp, 100 yds. from us. Slow walk.

I saw another on skyline to SE, 2 black ads. center cliffs to S. Probably descend at night, ascend in morning. But few in proportion to sign - in dry climate it lasts, + perhaps many shot in camp zone. 10720, left camp. Shutes overcast. Atop ridge S. of camp, 2 hawks sat on operculum pod of tree + let me approach to 8'. Nearly black birds.

Occasionally I saw yellow-green or brown mottled land urchins about 3' long. Some in boulders or on them, some bare operculum, + traces to holes in soil. Smallest about 18" long. I saw about 20, nearly stepping on some. Usually allow approach to 10' or less. / I saw 2

black goats in 100 yds. flat atop second ridge S. of bay; little veg. there, + few rocks. / I saw mocking bird hopping on back of large urchin

on rock; bird pecked at scale on nape of lizard - he compliant.

Later saw mockers hove within 6" resting urchin; common anor.

Journal - Galapagos

30 January 1964

Barrington Is., Galapagos

- 2 cotton? Mr. head camp canyon, brown ♀, + sep. ♂(?) (prob. only 1 ♂). Goat trails
stand out in canyon (wide) bottom, being light on black lava
4 surface. Trails up canyon. 0940, 4 (3 br., 1 bl.) in crest of camp
canyon; largest group seen. On rocky hill. Heard bleats elsewhere! at
higher level, ~~luscious~~ trees have more foliage. / 1030, I was opposite
1 highest peak about 1 mi. W. of camp; 1 black goat on peak. 1/4 mile to W.,
2 1050, 2 black, feeding. Actually I saw more skeletons than goats.
1130, jumped 3 lying in brush near ridge top, at 50 yds. (1 ♂ 2 ♀♀?);
3 ² ~~most~~ or all black. 1155, returning E. in next canyon S. of camp, I
1 heard bleats + finally black kid ran by at 50 yds., slowly. Horns
about 8", curved; only kid I have seen (the saw 3 kid skeletons). Also
3 saw 3 black adults on S. side of canyon, feeding; + another, alone, on
1 island summit. Saw 22 altogether, only 1 ♂ kid, + that probably sev'l
months old - poor reprod.? or young shot for food? / Collected:
Progneus under rock on flat red dust ground. Saw several doves,
which allowed approach to about 8'. / Many flies at camp near
beach - sea lion's goat excrement attract. Last eve we saw 1 tame
Oryzomys at camp, + mouse ate at uncovered food. Said to be annoying
here at times. Some grassquits, Myiarchus, + Dendroica seen. But
Peromyscus most conspicuous bird. Overcast night + much less
sea lion calling than previous night. / When flashlight turned
on in evening in beach area, hundreds of flies came - prob-
ably from sea lion! On set 20± traps + took 2 Oryzomys
before 8 p.m.

31 January 1964. 7 more Oryzomys in traps. / I departed
0740; 7/10 clouds. Walked to E. up rocky hills, then to

Journal - Galapagos

31 January 1964

Barrington Is., Galapagos

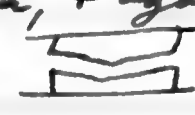
S. and W. to a high summit above tuff cliffs. In bottom draw, long pink flowered 'foxtail' proved to have root (or branched stalk) 10 mm. diam. Also a fine green grass in protected corners among rocks of wash. A coarse bunch grass cropped to 3" and all dead. / Bursera + yellow V flowered tree to 15' tall, often with new leaves upper parts. Strong odor of Bursera may protect it from goats; bleeds when injured. Green-red smelling shrub cropped low. / 1045, on a 5-10% fairly rocky slope about 1 mile (over 2 ridges) S. of camp, 5 goats, approx. all black. (last eve, 5:30 p.m., Orr saw gp. 3 black, + another 2 brown 1 black, about 200 yds. SW of camp.) High on hill of 3rd. ridge S. of camp, caves about 6' deep + 6' high in tuff; these deep in goat excrement, + many bones in caves + nearby. Shaded resting places? / During day while away from camp area I counted unweathered (no weathering cracks) skulls. Of 29 counted, 2 imm. and 6 kid (<1 yr old), rest adult - appeared to be at least 10 ♂, 7 ♀, others?, judged by size + horns. / Of living animals, saw 4 bl. 2 brown ad., 2 bl., 1 bl., 2 bl. ♀♀ 2 br. ♂♂, 1 bl. ♂, 1 bl. imm., 4 bl. ad., 2 bl. 3 brown ad. (Orr - possibly all ♂♂), 1 bl. 2 brown (on camp again; killed the brown one, ♂). all ads. except as noted - 17 black + 9 brown, + black imm. / Shot one chestnut brown, black face, beard, midd. stripe, ant. fore + hind legs, anterior shoulder, + lateral abdomen. Horn along inside curve, 47 mm. long from crown. Birth 83 cm. Length 122 cm; tail 12 cm. Beard 5" long, hind ft. 26 1/2 cm.

Journal - Galapagos.

*1 February 1964

Barrington Is., Galapagos

just S. of S. real beach; reached myzler high in feeding on bushes. Apparently at least 9, but prob. not over 10, in area surveyed. A "beard" heard once, but animal not seen (young?). / Back at camp 1835; still light enough to read. / Larnelle gp. had dug 2 soil profile trenches inland today.

2 February 1964. Lv. 6 a.m. 10/10 stratus. Walked up draw to W. of camp, heading for summit. 0735, saw summit to SW (had stopped 20 min.). 0755, on flat where 12 \pm ^{"manganita"} ^{stet} bushes to 10' tall, browse line at 5'; ^{stet} $4\frac{1}{2}'$ ^{photoed.} ~~photoed.~~ / Headed for summit. 0825, saw 5, all ad. 0707 (large horn + long beard). Came upon 12 \pm "manganita" bushes, browse line $4\frac{1}{2}'$. Cactus roots $\frac{1}{2}"$ long, near base trunk, pulled up + ends chewed off, doubtless by goats. I saw this sev'l places, the trees not apparently dying of effect. In this higher country, at least 1 in every 5 operation has 1 or more pads lying near base (this may be dry, unsucculent); whereas near camp, about 9 out of 10 have no pads at all. / Long beard lichen on bushes; these beards rare below $4\frac{1}{2}'$; possibly cropped by goats, the rock + other low lichens show no evidence use. / I saw one ad. ♂ grow at ^{1 $\frac{1}{2}"$} ~~base~~ ^{thick} ~~near~~ ^{near} fallen operation branch; paused to remove few remaining species? Pad $\frac{1}{2}$ eaten, mostly from one flat side. Shot him. Stom. contents wet, with about 10% ~~or~~ fresh cactus or other succulent material (perhaps 3% near camp). Doubtful that make daily trips down 600 ft. ^{alt.} slope to sea daily here. No parasites seen. Liver unregated. No fat. Bubskin brown with black middorsal + lg black stripe, black face. He was with a female + kid (3 nos?). Basal $\frac{1}{2}$ molars black, + again upper (about P4) long, lower P short correspondingly  ^{molar} rows, side v.
 N. summit, goats tamer + perhaps more tame. One very small,

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Ecuador

2 February 1964.

Barrington Is., Galapagos Is.,

perhaps 1-2 m. - On flat of about 10 acres just SW of highest (w.) summit, I saw 16 goats at once. Widely spaced large bursera and opuntia, with many rather evenly spaced mats of common sprawling sticky red-fruited bush. Animals mostly resting. Only 1 apparent kid of in 16. In gp. of 11; ~~3 ad. ♂, 3 ad. ♀; 2 imm. ♀♀~~ in one gp.; remainder 400 yds. distant from there. In gp. of 11, only 3 brown. (Mostly one or cinnamon black included as black. On summit flat, prostrate bush of Prosopis type, green leaved, some legume fruits, sticky. Not seen elsewhere. I collected one large (12") fern in sheltered shaded crevice on N. side of highest point, about 30' down from summit. Other areas I near summit, evenly spaced 1 1/2 ft. high bushes of common type, leaf D and smelling of fresh pea pods. On windward slopes, S. side island, lichens common - rocks seem painted in pale yellow green, & bursera festooned. Dampier than N. slopes probably. Also, on one slope the "manganita" bushes to 10' high, openly spaced, brown at 5'. At about 600' level, apparent dried pond, with many stubs dead sedge, cropped at 3-6". No living sedges seen (one on inlet in bay). Left summit 1130. About 1330, came on band 6 ♂♂, 2 br. & black, all ads. Near them a black ♂ with R hind leg gone at heel; he lay on side, neck outstretched & pulled up so no throat & chin in straight line. Killed him, but found no wound. Dig out ground indicated long thrashing at site. Stomach 1/2 full, no green or succulent pieces, no obvious endoparasites & no ectop. Liver thin, small. No fat. Leg wound long healed & collapsed from use. (Possibly ^{wounded} shot by me or Balfour on previous day). / One. ♀ has small beard about 2" long, the most

Journal - Galapagos

2 February 1969

Barrington Is., Galapagos Is.

do not. I am uncertain about appearance imm. ♂ - horns, beard? / One specimen had trunk diam about 28." / Few skeletons near highest country. On today's route saw only 9 (1 mi. or + from camp): 2 kids, 3 ad ♂, 3 ad ♀ (smaller, straighter horns), 1 imm. Two had the typical malocclusion. / Of live animals, I saw following spec.: Br. ad. ♂ - Bl. ad. ♂ ♀ (buzzed; no beard) - Bl. ad. ♀, bl. imm., br. ♂, these 0720, hd. canyon w. of camp - Br. ad. ♂, Bl. ad. ♀ 0755 - 4 Bl. ♂ 1 Br. ♂ ad. 0815 - Br. ♂ Bl. ♂ ad. 0835 - 0855, Flat 1/2 mi. NE summit 1 bl. ♂, big kid, br. small kid - shot br. ♂ w. Bl. ♀ + Bl. kid - Nr. summit, Bl. ad. ♂, 2 br. ad. ♀ ♀, 1 br. kid, 0940 - Bl. ad. ♂ - Top, 2 bl. ad. ♂, 1 br. ad. ♀ - bl. ad. ♂, br. ad. ♂, bl. ♀ - br. ♂ imm. - bl. ad. ♂, 2 bl. ad. ♀ ♀ - br. ad. ♂, bl. imm. ♂ - br. ad. ♂, bl. imm. ♂, bl. ad. ♀, br. kid. - 3 br. ♂, 1 bl. ♂, 1 bl. ♀ - 2 br. ♀ - 2 bl. ♀ - 2 ad. ♂, 1 imm. ♀, black - bl. ♂, br. ♂ - 4 bl. 2 br. ad. ♂ (1330). 1 bl. ♂ ad. (shot). Totals: 62 seen; 24 br. 36 black. (♂ 15-18; ♀ 5-13); (kid) ♂ / ♀ = 34 / 18 = 188 ♂ ♂ / 100 ♀ ♀; doe-fawn, 18 / 5 = 100 / 28 (perhaps should include imm. s., if these < 1 yr.) Lgst. ♂ hand = 6. Mixed = 3 ♂ 3 ♀ 2 im. 1 kid + 2? / Ted Papenfuss said he saw 6 ± goats about 1/4 mile S. of station near Bradish pond about 5 p.m. / Yellow flowered tree = Cordia lutea; "margarita" = Maytenus abajata (Celastraceae).

3 February 1969. Some bushes nr. camp allowed approach to 2'. Some oryxgangs ran across brush at night, & others in food supplies. Departed Barrington about 9 a.m. & returned to academy bay on 1 course with sail + motor; arrived 12 noon.

Journal

12 February 1964

To Hood Island, Galapagos Is.

Rain & wind night. Left Acad. Bay with 17 others 0700 by patrol boat for Hood Is. Wet trip into waves. Arrived 12:15 p.m. at Pto. Suarez. We set up camp N. side peninsula. To S, colonies of masked & blue faced boobies (former mostly w. eggs, latter w. nestlings), and some forked tailed gulls (eggs & young). All approachable to touching distance on nests. Masked boobies nearer shore. Area of nesting open, tho a prostrate snake-green shrub common, and a 6' shrub at intervals. Goats probably aid in keeping shrubs small & low, thus favoring nesting area. A low small-leaved spiny shrub clearly branched. Sea lions common; some small pups, & bulls ^{largely} barking & threatening when approached. Marine iguanas common, & here verdigris green dorsally, with dull red sides, strikingly different color than at Santa Cruz. Boobies strike at them when iguanas approach closely. Iguanas also close to sea line, the red hermit crabs, gulls. Many small iguanas; none as large as on station on Santa Cruz. / N. camp, mostly Cryptocarpus bushes, heavily branched by goats. / Within 1/2 hr. after landing, Papenfuss shot bird 2 ♀ & m. camp area, with pistol. Kid ♂, about 20 lbs., bay color. 1 ad. ♀ no. emb., some milk nipples, no emb. follicles, no beard. 1 ad. ♀ bay, white blaze side, no udder full, 3" beard. I also saw brown ad. ♀ m. camp. The stomach had about 25% green material; whole leaves chunks & twigs to 2" x 1/4". Cryptoc. twigs included. Some mesenteric fat; otherwise no deposits. Apparently more spp. shrubs than Barrington; so goats fatter, density higher, higher prop. ♀ & kids, few black, some with white marks (none on B). More bushes & closer, taller, so even in rel. leafless state (now), but cannot see animals at distance. / about 1/4 mi. E. of camp, m. N. shore, one opuntia tree, 18" d.b.h. No spade or branches below 6';

Journal

12 February 1964

Hood Is., Galapagos Is.

presumably because of goats. Next lone opuntia $\frac{1}{4}$ mile farther E.; no pads beneath either, & no signs small plants. Spines fine & flexible on leaves.

13 February, 1964. Departed 0800 for hike to area summit. Walked

along N. shore. 0825, saw ad. ♀ bay, hid (2" horns), bay, $\frac{1}{2}$ mi. E. camp. Shel. w. hid; ad. ♀, 9" horns (ant. curve). Near shore, Maytenus bushes with brown line at 5'. Some also had Cryptocarpus, vine like, in tops, w. Mayt. bush dead or alive. Bark Mayt. had old healed scars, as of horn or hoof scrapes, sometimes nearly girdling. A low 4' shrub, green shiny lanceolate 3" leaves, apparently not eaten (collected). Prosopis commonest tree on N. slopes, to 10'-15'. Green leaves to ground level, the tips many branches browned. Palatability - Mayt., Crypt., Prosop., apparently. Spines may protect Prosopis. / ♂ skull, 21" horn (crown to tip on curve medial edge), malocclusion, w. \overline{M}_1 short. / 0843, group of ♂, 5 ♀, 2 kids. ♂ bay with black midd. Kids close to ♀♀ in alarm. Started away when I to 50 yds. / Old skull, 26 $\frac{3}{4}$ " on medial edge horn, about 380° twist. / Being inland 400 yds., boulders 100% & dry mesquite bushes (little else), rare Maytenus heavily browned. Pop. density prob. lowish in pure mesquite. / Back on N. coast 0940. Cryptoc. among boulders browned low. Saw ^{2 sp.} ad. ♀, ad. ?, kid. Some Bursera trees w. a few green lvs. (as at Barrington). 0955, nr. shore, ^{4 more} sp. of 7, ♂ mostly bay brown. ♀, one black midd. ♂, one white blaze side; another faded-bay (nr. white) head & lower parts. No kids. 3 ad. ♂, 4 ad. ♀♀ (one w. large full udder). Some reached for Cryptocarpus on hind feet, back nearly vertical, fore feet in branches. / Occas. Parkinsonia, in bloom. Bursera bark fully scraped, as of teeth - at a fallen one had nearly all bark removed; no

Journal

13 February 1964

Hood Island, Galapagos Is.

^{rep}
 sat at edges (mostly rep normally, protuber?). Near coast N. of summit, I
 saw 3 isolated Opuntia in mesquite. Walking inland (S.), 1130, entered
 edge open zone, small boulders scattered to bushes, occas. Opuntia.
 (7, 0)
 (50 to 200 yds. apart). Photos Opuntia. This was above a narrow
Bursera zone. Occas. Cordia tree (yellow flower) or Castela low bush.
Opuntia - branch stubs lower crown, at about 6'. Unscathed limbs, tho
 spines. One had stiff spines part trunk (prob. young plant has
 large spines, tho lower parts have soft spines). / Freshly Recently dead
 brown or lay under shade trees. Higher, more Opuntia on N. slope. One
 2' diam.; many goat droppings on. / Sp. Black ♂, 2 brown
 + ad. ♀, + br. + bl. y. /
 ♀ ♀, in alarm, ♀ ♀ stayed close to ♂. He buzzed at me, at 50 yds. / Sp.,
 ad. ♀ chocolate, ^{w.} ~~ad. ♀~~ white side blaze, ad. ♀ tan, ad. ♂? / In open
 area, many tufts fine burned grass, grazed to 2"; dead & dry, but
 new grass & forbs 1"-2" high nearly every step at about 500'
 level. So good seed germination, + ^{new} ~~new~~ herbs alongside boulders
 & small rocks. Water standing in holes atop rocks. / 1250, I
 was at about 550', to N. of peak, & started back to W. / 1305, gp.
 3 ad. ♀ (boy w. white blaze side chest, boy, & huckskin), big boy
 hid. / 1400, gp. 3 ♂ (boy, 1 w. white blaze). / ~~1400, 3 ♂ ♂ ad.~~
 1435, gp. 2 ♂ (boy w. large side blaze; black-brown) + 1 ad. ?.
 Returned to camp. / Picked up shell ad. ♂ and rep ♂ Galapagus
 on beach. / Off beach in front camp, got 2 fine Largactis in
 20 min. - grouper, parrot fish, green-spined urchin, & usual there.

14 February 1964. 11 of us left via patrol boat for Charles,
 leaving 7 (Bartholomew, Benedictine, Amador, Peterson, Ortiz,
 Carpenter, K.) on Hood, with Castro & Latano. / In photoing
 at weather shore, a big wave took me by surprise & soaked

Journal

14 February 1964.

Hood Is., Galapagos Is.


cameras, lenses, or well as carrying off recent notes. Some sea lion pups very small; perhaps 1-2 wks. old. / 1410, I looked for goats to E. of camp. 500 yds. E., 2 ad. ♂♂; one boy, one boy with large white area side (more white than colored); one chestnut with black middorsal & other trim. An hour later, same 2 still together. Another 2 ^{ad.} ♂♂, one boy one tar. In opuntia 4 pads high, in open, 200 yds. S. of large opuntia nr. camp. / Papenfuss & Ortiz reported seeing at least 5 young opuntia in hike to summit yesterday. P. said he saw one gp. about 15 goats. In albatross (?) nesting area above cliffs, Cryptocarpus browsed very low by goats. B & C little browsed. I found leaves on stubs (2") Croton bushes; goats tend to eliminate?

15 February 1964. By Castro's boat to Puerto Cevallos; took over 2 hrs. Saw 1 shark, 1 Chelone, on way. On point, one young downy headed albatross ran about, tho no ads. seen. Marshled boobies on eggs & young; a few hundred. Prob. fork-tailed gulls nesting, but no blue-failed boobies. / In one rocky hill area, mod. Sesuvium-like succulent, mod. ^{grown} but still going strong. Saw no goats, but many droppings & skeletons. Site of old radar station (to 1945?). Reverse aspect of gray dead brush about 6' tall. Much of it mesquite with few leaves; some leafless Cordia, & other leafless species. Goats had browsed Cryptocarpus heavily, but green. Cactus rare; none obvious near landing area. We had seen sev'l cactus trees nr. NE pt. of island, & several or small offshore islands. Others or Isardner Is., which we visited 1:15 to 2:30 p.m. Much more interwoven

Journal

15 February 1964

Gardner Is. nr. Hood Is., Galapagos.

shaggy effect of veg., than on Hood. No evid. goats. Maytenus + Cryptocarpus grew low but unbranched. Cotton plants common some inter. Ortiz collected a snake. Saw forster, Tropidurus. I counted 20 branched Opuntia but only 3 straight unbranched, so reprod. low naturally. Lower & more spreading than on Hood, the trunks some thick, & pads of branches often hang to ground or near it. | Much Bursaria, nearly leafless. Many Croton bushes with a few leaves; commonly 3' to 10' on cliffs. | Below Opuntia, many ~~drooping~~ leaves, but old & dried & not sprouting. Some of shape: , wider than high. Trunk spines 2" + sharp, hard; leaf spines soft. | Among boulders nearly everywhere, clamber jointed stalked leafless fork in clumps. A pubescent leaved bush with small yellow flowers. A vine with "rouled" like fruit w. large hairy seeds covered some bushes. Collected samples. Attractive clear calm water in bays N. side; I speared 2 large octopus there. | One Opuntia 24" diam, spreading 10' wide, 9' high; trunk branched at 1 1/2'. Dozens old pads below & near. Why so little reprod.? Passage seed thru animals needed? A dry unattractive island with little ~~wild~~ wildlife.

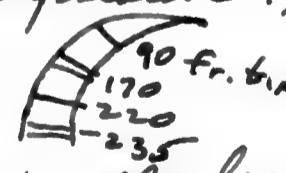
16 February 1964. Some rain night. | Castro said had seen goats

drink sea water N. side Santa Cruz. also had seen some dying there, with diarrhea. He had noticed some of same effects that I had, such as eating Bursaria bark. He said sometimes eat in to center of Opuntia & break it over; then many feed on it - he saw 15 ^{goats eating one fallen tree} at once on Hood, he said. Govt. had prohibited killing goats, at one time, so argument with Longway who wanted to kill. Then not supposed to take more than 2.

Journal

16 February 1964

Hood Is., Galapagos Is.

Now less restriction. Boys somet. catch on Santa Cruz & sell to ships. Commercialization not allowed. But even if goat meat sold, price would be below beef, which is 80 centavos / lb. (about 4¢). Castro said 1 yr. required to kill off the 6 goats on Plozas Is.; at one time 4 men hunted 2-3 goats known there, but found none. / 0920, left camp & walked E. Shel. ♀ ad, born 11 1/2" on curve from crown; Mz short, bilat, espec. laterally. / Camp zone + flat to E., Cordia bushes to 7'; mesquite, B, C, Croton shrubs w. few leaves. / 1000, saw ad. ♂, ♀, + one ad., 200' away, lay alone. Then in Bursera - mesquite zone, more open, but all boulders underfoot & few goats (rare tracks + fresh droppings, the old droppings + shel.). / At base of rocky hill, much droppings; 2 ad. ♀, + ad. (~~♀~~ ^{chestnut} ?). I shot 2 ♀♀. One large, some milk udder, 1150 tot. l., 15 tail; horn 5" long on curve (ring 1 1/2" + 4" from tip); slight white spot crown; no ectoparas. seen; stom., liver, intestine weigh 17 lbs., + rest 29 lbs., for 46 lb. total. Uterus + ov. inactive but seemed mature. Stom. cont. 20% green, incl. ^{green} sedge (?); no molar wear. - One yr. old? - do rings on horns indicate dry seasons? / Other, chestnut (buff), 1220-150 mm. Horn 10"  10% green. No fat; little flesh, mostly bones & sinews - lower than those in camp. / Returned to N. toward beach, thru mesquite zone of large trees (10-15'), many dead, & boulders underfoot, w. no goats seen - prob. 10/25 mi. or less. After reached beach area, I saw 2 small ad. ♀♀, buff. Then, at 1430, 2 ♀♀ with kid about 20 lbs. I shot ♀♀. One 1150-150, chestnut (buff), stom. contents mostly green, incl. broad leaves, & much liquid. No activity gnawed, but some milk udder. Horn 7 1/2"; w. 3

Journal

Ecuador

16 February 1964 Hood Island, Galapagos Islands,
 rings A. Lean; no fat ext. or int. about 50 lbs. est. / other ♀,
 larger; 1250-140. $\emptyset \frac{1}{4}$ from $\frac{140}{170}$. Milk reddish Lean. No emb.
 or repro. activity. Stom. ^(human) cont. green too - so probably do not go
 up + down hill $\frac{1}{4}$ mile. / Fallen Prosopis had much bark eaten.

17 February 1964 Left by boat (fr. Pto. Suarez camp)
 w. Benedictus + Artiz at 0700. Landed on sand beach opposite
 Gardner Is. Several sets turtle tracks in sand + apparent
 nest diggings. Along shore en route saw at least 7
 goats in 3 gps. (feed m. shore in morning?). Flat shore
 area up to about 50'; on N. side island, ^{gray} green with mesquite,
 cordia, dead bushes. Then 50 to 300±'; Bursera scattered +
 more open. Above, mesquite again. / B. took 4 snakes in
 rocky ground while traveling. Saw carpenter bee at flowers
 of Parhiesonia. We visited dry lagoon, perhaps 300 m. long on
 curve, about 3000 m. SW of Gardner Is. - no sign tortoise or
Convolophus. / In "lagoon," goats. ♀ + kid. again, ♀ + kid. /
 Other separated "lagoon" areas, rocks + soft earth where once
 apparently $\emptyset \pm$ water. / 0925, ♀ and kid (wh. band ever-
 shed belly). Three mesquite over boulders; dry, but
 some lower mesquite. Arrived flattish zone ENE of sum-
 mit. Scattered Opuntia trees (no pads beneath any); saw
 no reproduction of cactus. Oscar. apparent dry ponds,
 with closely grazed stubble bunch grass, mostly dead. Must
 be much more grass in wet season. / 1045, 2 ♀ ♀ and kid,
 kid black, ♀ bl. w. white blaze side; other ♀ lay. / 1130,
 3 lay ♀ ♀. Wandered + zigzagged among opuntias +
 low spots, but no sign galapagos or convolophus. To


Journal

17

16 February 1967

Hood Is., Galapagos Is.

near summit, where large opuntias + rather open. Occas. Cordia tree. Saw: loose gp. of 8 or 9; 2 ad. ♂♂, 2 yrl., 3 ad. ♀♀, 1 kid. / Apparently fair pop. goats near top. Lower, fewer in boulder-mesquite zone. / Saw 2 ♂ + kid (♂ shot?). 1445, 4 ♀♀. Hearing cows. / Picked up bones show amelatonin too; compare later. islands for rel. water growth? / Castro says on former Is. some goats have ^{band} ~~ring~~ black around middle. / Re donkeys, he said people not eat, tho meat all right w. no particular flavor.

18 February 1967. Sprinkle at night. Sea rel. calm today, & San Cristobal clearly visible. / W. Castro I went langosta hunting + we got about 10, incl. some about 6 lbs. + occas. one w. eggs. A heluthereia about 5" long, ~~found~~ ^{fastened} to rocks, with numerous 5 mm. principles on exposed side, common. On sandy bottom area one site, many large dark 5 rayed starfish. Orange sea fans on rocks, tho not abundant. Saw 2 rays about 3' long, rounded anteriorly . Parrot fish resemble goldfish; some orange + black, or orange, black, + white mixtures. / About 1530 walked E. on N. shore, looking for goats. Gps. 3 ad. 1 kid; shot chestnut ad. ♀, 121 cm. tot. l., 15 tail. Lactating (kid prob. here). Horn 23 cm., with ridge 6, 14, 19, 21 mm. from tip. No emb. or repro. activity. Slight fat in omentum. Stom. 50% green lvs. Cryptos. / Saw gp. 2 ♂♂, 1 lb. w. chestn. side blaze, other chestnut. Then 1/2 mile E. of camp, near shore, rock. saw. Then saw ♀ with kid, both bay. and 2 more bay (♀♀). all before first ^{N.} pt. to E. of camp. Occas. Maytenus bushes along the shore. / I walked back toward camp + 300 yds. E. of it saw the 2 ad.

Journal

18 February 1964

Hood Is., Galapagos Is.

♂♂, + shot chestnut one. 124-16 cm. Testis 90 x 50, ext. to scrotum, incl. epid. Cut testis had no spermatids; thin milky at base, no obvious sperm flow. Horn 13", w. rings 20 + 27 cm from tip (then 6 to crown). Basal granth rugged + divisions not apparent (less ringy than in ♀♀?). Rumens + backs mostly leaves of Cryptoc. (50% at least). Little muscle on loins.

19 February 1964. about 0745, shot 3 ♂♂ 1 ♀ 200 yds.

E. camp, nr. site of last yesterday. (The 2 ♂♂ yesterday, had gone over 1/4 mile W. on shore area) There in heavily br. Cryptoc. area. 1 ♂ ad., ^{horn} 15 1/2", head 7" long. 131-17.

Dull boy w. white blaze side + small wh. area base horns.

Horn rings, fr. tip: 15, 25 cm., + 19 most ridged at base. P4 shot.

Base molars black. Sl. fat omentum. No rumen apparent.

Second ad. ♂, 126-15 cm. Chestnut (black side face; wh. spot base horns). Horn 14 1/2"; rings 17-26 fr tip; + 10 to base (too ridged for separation). Testis, ext. to scrotum, 90 x 50 mm.

No appar. rumen; sl. fat omentum; mostly Cryptoc. lvs. in stom. When punctured, about 1/2 gal. water squirted out of rumen.

1 ♂ ad., 130-15. ^{+ 34} Chestn. w. white crown. Horn 16; rings 13 + 27, fr. tip, + 5 to base. Testis 5 x 11. G.I. best

from diaphragm to ^{rectum} anus, 20 lbs. These stomachs not as full as in evening, so feed little at night? about 1/2 full rumen.

Sl. fat omentum, but generally long w. little flesh. 1 ♀ ad., 120-16 1/2. Chestnut, w. tail 1/3 white. Horn 7". Rings, from tip, 6, 12, 15, + 2 cm

to base. More prom. ♀♀ than ♂♂; due physiologic drain? Hide in fine cord, + no parasites found. In the

Journal

19 February 1964

Hood Isl., Galapagos Is.

badly nesting zone, many dead short-cropped bunches of grass, as if once well tufted. The gray-green low shrub probably not browsed much, nor the sticky sp. about 3' tall nor the oval-leaved one 5' (much algae on stems). Reduction of Cryptoc. prominent on apparent alluvium nesting area nr. top cliff. / Patrol boat arrived from Floreana about 2 p.m., with 7 of our group. They saw no goats on F., but donkeys common + unutilized. Said to be wild dogs too. Scaligeria trees appar. descend to near coast S. of Black Beach. About 40 people (10 of them Wittmanns) live on Floreana. Three men from patrol boat caught by hand 2 ♀ ad. goats + took them to boat alive. ^{Douglas} ~~Douglas~~ in captivity, but poor flesh. They said would let them feed on Cryptoc. on Santa Cruz to fatten for killing. On previous trips they had caught one. How do they run down goats on this rough ground? One of men said many in area old radar station, + that born during "invierno" (= Dec.?). Later, D. Snow said he saw many small young ^{during} ~~one~~ ₁ sept. visit. / The short-browed peapod-smelling shrub also in badly nesting area; not Croton.

20 February 1964. Left 5:30 a.m. on patrol boat for Barrington + Acad. Bay; 14 of G.I.S.P. group aboard. / Calm weather, few waves; wind 5 kts. Arr. Barrington 0930 + went ashore. Cryptoc., Maytenus, browsed up to 3' only (lower than Hood). Found Croton bushes about 3' with few leaves, + some 10' with leaves at top; apparently not high palatability. ~~I~~ I picked up a few goat horns; they showed "annulations" similar to those on Hood. Fallen opuntia less destroyed than on Hood, appar.; one fallen

Journal

20 February 1964

To Santa Cruz, Galapagos Is.

showed no apparent bark removal since my early Feb. visit.

21 February 1964. Goat horns; one ♀ from Barr. showed

larger dist. later. rings than those from Hood, but seal or or from B. showed about = dist. to Hood specimens. / Rodriguez. of Guayaquil says dried fish about 6-7 s. / lb. before Easter, but ran price rest of yr. He said beef 2 s. / lb. in San Cristobal, vs. 8 reales (80 centavos) in Santa Cruz. Mr. Guayaquil, wild goats which are marketed; hide worth little. He confirmed that Salap Salap agric. products all grown, & better, Mr. Guayaquil; only fish prod. better here (& langostas). In S., whole langosta sold, head even preferred by some, (the only tail saved in Salap). / Forest Nelson said about 10-15,000 lbs. per mo. of langostas^{tail} taken to freezer per; then via Villamil to Guayaquil.

22 February 1964. Departed 10:30 a.m. & hiked up old trail to Bella Vista and Villuis (= Mrs. Horneman's farm), to stay 2 nights. about 2 1/2 hrs. hike up. In Bella Vista area a few small stores, & probably 200 or more people in vicinity. Ground nearly flat here, w. few rocks, compared to slopes. Bananas, sugar cane, oranges, & avocados, coffee in evidence. Hibiscus ~~hedges~~ hedges common. People healthy, happy, & apparently have usual Latin & community life. a church too, & churches widely scattered. / Horneman a run down farm, with coffee, avocados, fruit trees - but poorly kept up. Mrs. H. (Norwegian), there since 1929, said husband impractical. Many books in German & Norwegian, in 2 story wooden house, sleeping 7 in addition to Mrs. H., son Sigurd, & a helper. View to Acad. & Tortuga Bay. In area,

Journal

22 February 1964

Isla Santa Cruz, Galapagos

a leaf tree, ^{very} planted tall bamboo clumps, rare eucalyptus, occas. "mohogany" or red cedar" (= ? - not Swietenia m.), bolso. But coffee thecate common, + tall avocado trees lined trails + fields. Kept pigs + 5 cattle. House about 700' elev. Muddy in rain. Papaya, pineapple, "king fruit." / With Abbott, Bartholomew, Bernard, Marcial, walked 1 1/2 hrs. slowly up-slope to pure Miconia belt. Some grassland w. bracken + shrubs; a few Holstein cattle, in good cond. (the horses few + poor).

23 February 1964. Hiked to top of Santa Cruz; 9/10 overcast day w. ^{some} rain. Much grass, but mostly sedges, forbs, bracken. In low spots, some ponds w. many water plants, and caves leading down into hollows underground, fern-lined at mouth. Cattle tracks + droppings common, but I saw only one - a fine black bull at summit. Summit easily reached, + vegetation there nothing special, mostly grasses. Occasional bare circular spots appear. used for stamping or rolling. Few birds in high zone; one flock 10 ± finches, but saw no hawks. Bracken clumps give appearance out-over land in Pacific NW. (Local people say fire in past, + many more cattle - even herds - a few yrs. ago.) ~~Now~~ Now does not appear destructively grazed, tho may be in dry season. / I've talked with Alf Kestelben + father at their ranch. About 50 fine large Holstein cattle. Said started cattle about 10 yrs. ago w. bull bought Panama. But think dairy prod. little future; production meat more profitable. Pargola perhaps best grass for cattle. Elephant grass for choking out unwanted veg. Because droughts, grow plantains as cattle food reserve. Said many periods fire (set for "fun" by others), to 1962. Miconia

Journal

23 February 1964

Santa Cruz, Galapagos

formerly more extensive, covering all of hill called Camote to east. Improved weather prediction would help them much. Their ranch 140 hectares. Area of about 20 km. laterally on mt., 5 km. N+S, prob. arable. Alf thicker earth worms come in after clearing & changed soil, making muddier. Guayavillo & other noxious shrubs increasing in area. Thought room for many ^{more} people on Santa Cruz. Road from Acad. Bay would help market crops. Psidium used for fuel & building boards; matozanos for uprights and beams. / Mrs. H., pigs fed avocados.

24 February 1964. W. Sigvant, Pyle, & 3 others, hiked to tortoise country on Table Mtn., about 2 1/2 hrs. on up & down trail through shrubby weeds & cut-over land. One new cloaca w. corn planted. a Dexion frame of supposed schoolhouse, w. little clearing left. To find unclaimed land, appar. have to hike on down out & from Bella Vista. Finally trees, about 20', little cut-grass & acacia, & we came out on mostly open green grassland, short grazed, with scattered rocks (azalea? covered) and bushes. This near foot of Table Mtn. Cattle tracks & sign common. Occasionally heard burro or goat, tho saw none of these feral animals. / Duck with 6 \pm downy young on 2 ponds. Duck flopped away on pond as if could not take off; appar. distraction display. Then ducklings, which had been underwater in pink weed covered pond, appeared, scattered, & ducked under weeds again. / we saw 2 rails in flight among shrubs. Vermillion flycatchers occasional. / Visited edge of a hole about 500 yds. wide & 500' deep, w. pure grass area 100 yds. across in bottom. Saw

Journal

24 February 1964

Santa Cruz, Galapagos Is.

3 ad. or goats in bottom, & heard 2 others. But grazing effects not apparent save on trails across grass meadow. / We walked back to Horneman's in 2 hrs. In eve I returned to Acad. Bay.


25 February 1964. According to Luis Angermeyer, 2 men take about 100 lbs. dried bacalao per day, about 2000 lbs. / mo. Fish Nov. to Semana Santa. Now use bait. Fishing poor starting 15th yrs. ago, but perhaps improving. Fritz has sub-location outfit on boat for fish finding. Cat little turtle or eggs here, & no octopus. Fishing boat must be able to go out ^{& stay} about 25', & have economical reliable motor. He thought about 50 men in largosta bus., & that would be out of business within 1 yr. Little sport fishing now. / Cox, returning from trip, said many goats on Conway Bay. / Howell Williams, ret. from Chatham, said small cult. area, about 20% on E of island; west to N. very dry. Much guava in usable belt on W. side. Cattle present, but poorer than Santa Cruz; goats pres. but not common. Also burros. / C. Rich said also wild horses there. Goats few now, diminished. Some wild dogs, he was told. Burros in many or all parts island. Wild pigs & cattle too. Do pigs spread guava thru eating fruit? More soil than Santa Cruz, & to lower alt., perhaps 400'. Huge areas guava in upper parts. Rich was told about 15% cultivated. Coffee apparently excellent. Plenty opuntia, cactus, on shores. About 2500 people on San Cristobal; many military. Fresh streams in S. part.

27 February 1964. Boarded "Golden Bear" about 11 a.m. Talked with geologists of Ecuador who had been on James Is., about 130 people

Journal

27 February 1964

Santa Cruz, Galapagos

there; they thought 2x that needed. Good quality lens of salt; about 300 000 quintals / yr. (= 15 000 tons). This sells for 33 s. / 100 lbs. in Guayaquil. Then recrystallized for sale. about 1/2 requirement of Ec. per yr. He thought would last many (50?) yrs. / Cox said he saw 5± goats on ⁵ shore Baltra recently. Castro said veg. had changed much at Conway Bay last few yrs, presumably due goats (= cause or effect?). He & Williams reaffirmed that wells probably would give fresh water, if proper studies made. / Some plant names, given by Forberg to Hornemann: papa china or taro = Colocassia esculenta. Otoy or tenua = Xanthosoma. Yuca = manioc or cassava; Manihot utilisima. Piñon, the living fence tree, = Jatropha curcas (Euphorbiaceae). Campeva = Datura; stemonium (Solanaceae). Tizon de papa, black fungus or blight. / Williams expl. of the salt on farms: sea water percolates in to basin below sea level. Crops aided by dark lava sides of pit. Then: . Lens 7 meters thick center, 4 meters edges.

28 February 1964. Headed for Guayaquil on "Golden Bear." Nearly calm. Few sea birds. / Acad. Bay port captain told me that 5 Japanese (or foreign) vessels now in Galapa. Use long lines; keep all kinds fish, including large sharks. Set "matricula good for one year, and a "permiso" for 90 days; pay for these. About 21 boats fish for Bacalao, from Dec. on to Easter. Tuna fishing off N. Coast Ecuador, not in Galapa. Perhaps 50 men in lobster boats. Villamil takes tails to mainland.

Later

— to Berkeley via "Golden Bear."

C.B. Kojer

1967

Catalogue

3037 - 3371

P. ru

Koford, C
1967

Specimen Catalog
Peru 1967

2 July 20 Km. N. 6 Km. W. of Chancay, Dpt. Lima, Peru. 300 ft.
[Lomas de Lachay, dry SE side]

3037 ♂ (coll. R. Huey) *Phyllotis* d. 198-113-22-2 ♀, 20 gms.

3038 ♂ (coll. F. McCollum) " 195-108-22-23, 20 gms.

Arrested in dry granite boulder area w. sparse cactus cover.

10 July 3 Km. S. 12 Km. W. of Huaras, Dpto. Ancash, Peru. 12 500 ft.

3039 ♂ t. 7 mm. 137-56-18-17, 14 gms.

Under 2' boulder in sht. grass + shrubs, 100 yds. down 20% slope from cliff; N aspect.

3040 ♂ no meas. 12 gms.

Base 10' boulder edge 2' tala + spiny bunch grass on N. slope 50 yds. below cliffs.

3041 ♀ v. imp., no emb. 148-61-21-15, 20 gms.

Under 6' boulder on slope, close cropped grass + shrubs, 100 yds below cliffs.

3042 ♀ lact, t. ut. se. *Phyllotis pictus* 210-90-24-23, 50 gms.

Base rock wall 100' from cliffs, N. aspect 15% slope, sht. dry grass + tala. (308) Same.

3043 ♂ t. 10 *P. pictus* 197-82-25-22, 50 gms.

[Rio Pira valley, 80 Km. by road from Casma toward Huaraz]

11 July 1 Km. N. 12 Km. E. of Pariacoto, Dpto. Ancash, Peru. 8500 ft.

3044 ♂ t. 5 mm. *Oryzomys* 217-122-25-16, 17 gms.

Rocky dry ground under bush on 10% N. slope.

3045 ♀ lact.; t. ut. bulges 5 mm. *Phyllotis* 223-115-24-21, 46 gms.

Under 4' boulder by rock wall next to 3' bushes on 15% N. slope.

3046 ♀ v. per f., 11 nipples, lact. tiss. *Marmosa* 227-118-15-24, 46 gms.

Foot, 4' rock wall by 2' tall sparse dry herbs on dry N. slope nr. bottom draw.

3047 ♀ lact. tiss. *Akodon* 201-101-26-21, 40 gms.

Base dead tree nr. rock + shrubs; dry slope.

3048 ♀ 5 emb., 32 mm. C-R *Phyllotis magister* 278-135-29-23, 101 gms.

[3049 on next page] Base old rock wall half-covered w. shrubs; dry N.-aspect slope.

3311

3050 ♀ v. imp., no emb. *Phyllotis* 208-98-27-22, 38 gms.

[dupl.,
renumbered]

Base dead tree by rock slide + shrubs on dry N. slope.

P. pictus

10 July 1967

discarded 3; 2 ♂♂ 36 gms. t. 9 mm.

1 ♀ 46 gms. no emb. or scars.

11 July 1967

discards.

ak. bol. ♀ 11 gms.

♀ ad., 3 ut. scars.

P. darw. or and. in

♂ 30 gm., t. 4 mm.

♀ imm. 22 gms, 10 gms, 18 gms.

Specimen Catalog
Peru 1967

- 11 July 1967 1 Km. N., 12 Km. E. of Pariacoto, Dpto. Ancash, Peru. 8500' [V. moist elev.]
lact. + incubating
3049 ♀ v. imp., 1 emb. C-R 23, Akodon b. 174-76-20-14, 30 gms.
Under boulder next to 3' bush on dry N. slope.
Also, discarded: Phyllotis darwini imm. wts. 10 gms., 10, 18, 22 gms., and ad ♂ 30 gms. t. 4 mm. Akodon boliviensis ad. ♀ w. 3 at. scars, + 11 gm. ♀ imm.
- [by road up valley] 9000 ft.
12 July 1 Km. N., 14 Km. E. of Pariacoto, Dpto. Ancash, Peru. 8500'
3050 ♂ t. 3 mm. small mouse, long tail. 162-86-20-15, 14 gms.
Mod. damp bank under 3' bush 20' from stream.
- 3051 ♂ t. 3. Akodon boliviensis 159-70-20-14, 22 gms.
Under bush by stream. Discarded ♀ 21 gms.
- 3052 ♀ 4 emb. C-R 10 mm. Phyllotis d. 200-100-25-20, 37 gms.
Base 1/2 dead Cereus and forb tangle on mod. dry slope; rocks w/i 5 yds.
Discarded ♂ 36 gms. t. 9, ♀ 41 gms. lact., ♀ 26 gms. imm.
- 14 July 5 Km. NE of Pacasmayo, Dpto. La Libertad, Peru. 200 ft.
on nest, 1 egg 19x25 mm., 1/3 inc.
3053 ♂ t. 5 Caprimulgus longirostris. 33 gms, no fat.
Nest on sandy flat ground w. sticks 10' from ^{dead} thorn bush fence.
- 3054 ♀ lact. t. 15, ut. h. 1 mm. diam. Akodon boliviensis 166-70-20-16, 26 gms.
Base green thorny bush in thorn bush fence on sandy flat ground w. mesquite trees.
- 15 July 2 Km SE of Morape, Dpto. Lambayeque, Peru. 100'.
3055 ♂ t. 8. pale mouse 149-70-19-16, 16 g.
Under bush (Capparis?) in fence row, sandy plain, Prosopis dominant.
- 3056 ♂ t. 8 larger mouse 216-117-26-18, 30 g.
Elaenia albiceps modesto
- 3057 ♂ t. 2 Empidonax 12 gms, no fat. In Prosopis
- 16 July 10 Km. E. of Piura, Dpto. Piura, Peru. 300 ft.
3058 ♂ t. 2 Synallaxis stictothorax maculata 11 gms, no fat. Sandy desert. In Prosopis in
- 6 Km. N. of Motupe, Dpto. Lambayeque, Peru. 500 ft.
skull 1/4 clear.
3059 ♂ t. 2 Cyanocorax mystacalis 161 gms, no fat.
One of several in loose flock in roadside 30' Prosopis.

Specimen Catalog
Peru

1967

17 July

10 km. E. of Piura, Dpto. Piura, Peru. ⁵⁰300 ft.
2 ut. bulges, 4 mm. (L+R); lact. tiss.

3060

♀ v. imp.

pale mouse

158-78-¹⁹20-16

149.

3061

♂ t. 6

pale mouse

158-79-18-17

159

4' sand mound w. "mule ear" shrub on top. Flat sand + shrub area.

16 July

11 km. N. of Jayanca, Dpto. Lambayeque, Peru.

3062

(Coll. R. Hamilton) *Poliophtila plumbea bilineata*
grateolator

6 gms, no fat.

16 July

10 km E. of Piura, Dpto. Piura, Peru. ⁵⁰300 ft.
SK. oss. F.

3064

♂ t. 2

Geositta peruviana paytae

11 gms.

18 July

30 km. SSE of Sechura, Dpto. Piura, Peru. ¹⁰⁰⁻³⁰400 ft.

3063

♂ t. 7

pale mouse *Phyllotis gerbillus* 166-70-20-16, ¹⁶26 gms.

Top of sand hill w. "mule ear" evergreen shrub; flat hard desert.

Discarded ♂ 11+ gms (not eaten), testis 6 mm. long. Small dense w. shrubs.

Virilla
Virilla~~Virilla Estuary~~ Virilla - Estuary,
36 km. SSE of Sechura, Dept. Piura, Peru. 30 ft.

3065

♀ 1st. foll. < 1 mm. *Crobia minutilla*

27 gms, fat.

One of flock 20± on shore estuary.

18 July

Punta Aguja, 3037 km. SW of Sechura, Dpto. Piura, Peru.

3066

♂ t. 3

Sterna lorata

52 gms, sl. fat

one of flock 20± flying low over sand beach.

19 July

3067

♀

small mouse

tail broken short
103-43-20-18, 7 gms.

Sandy gr. under boulder in bottom dry wash 8' from low shrub.

20 July

Reventazon, 64 km. S., 14 km. W. of Sechura, Dpto. Piura, Peru. 100 ft.
2 ut. bulges, 4 mm.

3068

♀ lact.

pale mouse

174-85-17-16

21 gms.

3069

♂ t. 7

"

164-78-18-17

19 gms

3070

♂ t. 7

"

157-77-19-18

18 gms.

3071

♂ t. 8

"

151-66-18-17

20 gms.

3072

♂ t. 8

"

156-76-18-16

17 gms.

Discarded ♀ 7 gms. imm., ♀ 11 gms. imm., ♂ 11 gms. t. 4, ♂ 14 gms. test. 8 mm.,

♀ 14 gms. v. imp., no emb.; ♂ 14 gms. t. 9 mm., ♂ 14 gms. t. 8.

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- 20 July Leventazon, 64 km S. 19 km W of Sechura, Dpto Piura, Peru. 100 ft.
(Coll. R. Huey) *Myiarchus semirufus*
3073 ♂ t. 2 flycatcher In mesquite. no fat.
- 3074 ♂ t. 6 pale mouse 157-80-19-17, 15 gms.
- 22 July 4 km SE of Bayovar, Dpto. Piura, Peru. 100 ft.
- 3075 ♂ t. 1 coerebid *Conirostrum cinereum fraseri* sl. fat, 9 gms.
- Mesquite tree in sandy brush area.
- 3076 ♂ t. 1 ^{sp. ?} hummingbird. same area. sl. fat, 4 gms.
Skull + baculum only.
- 3078 ♂ t. 17 fox 670-275-112-67, 1200 gms.
Punta Tric Trac, 2 km SE of Bayovar,
- 3079 ♂ t. 2 grasshopper *Piezarchia cinerea* 37 gms, sl. fat.
- 3080 ♀ o.n.e., juv. (sk. Y clear) *Hemius longicaudatus* ^{albogriseus} n sl. fat; 56 gms.
- 22 July Punta Tric Trac, 2 km E. of Bayovar, Dpto. Piura, Peru. 20 ft.
(Coll. R. Hamilton) *Aechmophorus*
- 3077 ♀ 1st. foll. mm. *Podiceps major* ? mod. fat; 820 gms.
- 23 July L. ^{Progne modesta}
3081 ♂ R.t. 8x4 (A.t. small). martin (murphyi?) mod. fat; 38 gms.
- bird flying near and alighting on sea cliffs in evening.
sk. + skull
- 3082 ♀ no emb. or sc. fox 647-227-112-64, 1550 gms.
- 24 July 24 km S. of Sechura, Dpto. Piura, Peru. 10 ft.
- 3083 ♀ 1st. ov. 3 mm. oystercatcher *Harembus ostralegus* 600 gms; mod. fat.
- One of flock 20+ on mud flat of Virila Estuary.
- 24 July Punta Tric Trac, 2 km E. of Bayovar, Dpto. Piura, Peru. 50 ft.
- 3084 ♀ *Scositta peruviana payson* no fat, 14 gms.
- 25 July 11 km S. 11 km E. of Bayovar, Dpto. Piura, Peru. 100 ft.
(Coll. R. Huey) *Amazilia amazilia* ^{shrubs on sand hummock}
3085 ♀ o.n.e. hummingbird. (leucophoca?) mod fat, 4 1/2 gms.
- 26 July 26 July ^{coll. fleas.}
3086 ♂ t. 6 pale mouse 160-79-18-16, 16 gms.
- 3087 ♂ t. 6 " " 159-76-19-17, 16 gms.
- 28 July 8 km N. 8 km W. of Piura, Dpto. Piura, Peru. 100 ft.
- 3088 ♂ t. 8 pale mouse, Phyll. gerbillus 166-84-19-18, 18 gms.
- 29 July Fondo, 14 km N. 13 km E. of Talara, Dpto. Piura, Peru [P. Hinds]
- 3089 ♀ 1st. ov. imm *Aratinga canescens erythrogastra* sl. fat, 160 gms.

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Specimen Catalog

Note: Some birds
destroyed by cat

29 July Fundo, 14 Km. N. 13 Km. E. of Talara, Dpto. Piura, Peru

- 3090 ♀ ^{sk. 1/3 clear} ~~one.~~ *Lepidocolaptes s. souleyetii* ^{woodpecker} sl. fat; 23 gms.
(Cat broke off head)
- 3091 P.O.N.C. ^{man} sl. fat, 19 gms.
- 3092 ♂ t. 1 mm. ^(Prob. juv.) *Synallaxis stictothorax macrotis* ^{spunetail} sl. fat; 9 gms.
- 3093 ? *gnaticola* ^{Destroyed by cat} sl. fat; 5 gms.
- 3094 ♂ t. 1 *Veniliornis callonotus major* ^{woodpecker} sl. fat; 29 gms.
- 3095 ♂ t. 6 *Desmodus rotundus* 03-0-18-18, 33 gms.
- 3096 ♀ no emb. bat, long nosed 66-8-11-13, 11 gms.
- 3097 ♀ ^{no emb.} bat, ^{very} long nosed 75-10-11-16, 14 gms.
(Coll. F. Mc Callum)
- 3098 ♂ t. 2 bat, long nosed. 63-7-11-13, 12 gms.
- 3099 ♂ t. 2 " " " 66-8-11-13, 9 gms.
- 3100 ♀ ^{1 emb. 22 C-R} ^{pregn.} " " " 70-8-11-14, 12 gms.
- 3101 ♀ ut. inact. *Desmodus rotundus* 80-0-18-17, 30 gms.

31 July Paríñas, 15 Km. E. 7 Km. N. of Talara, Dpto. Piura, Peru. 400'

- 3102 ♀ no emb. bat, pipistrelle? 73-35-4-11, 7 gms.
- 3103 ♀ no emb. bat, *Myotis* 82-36-7-12, 5 1/2 gms.
- 3104 ♂ t. 3 bat, pipistrelle 75-34-5-12, 2 gms.
- 3105 ♀ bat, pipistrelle 79-39-6-13, 2 1/2 gms.
- 3106 ♀ O.N.C. *Tumbezia salvini* ^{flycatcher, yellow belly} mod. fat, 11 gms.
- 3107 ♀ O.N.C. *Thryothorus superciliosus baroni* ^{warbler} sl. fat, 21 gms.
- 3108 ♀ no emb. ut. horn 3 mm. diam. *Spilogale* 490-75-58-23, 1000 gms.

1 Aug. Paríñas, 7 Km. N. 15 Km. E. of Talara,
(some w. t. to 5 mm.) *Phaenonymia* sp.

- 3109 ♂ t. 4 ^{flycatcher, gray} Common sl. fat, 11 gms.
- 3110 ♀ ut. inact. *Myotis* 83-35-8-13, 5 gms.
- 3111 sk. 8/10 clear *Veniliornis callonotus major*
3110 ♀ O.N.C. ^{woodpecker} sl. fat, 24 gms.

2 Aug. Paríñas, 7 Km. N. 15 Km. E. of Talara,

- 3112 ♀ O.N.C. *Piezorhina cinerea* ^{grosbeak} 35 gms.

Discarded ♂ t. 2 35 gms. Common in mesquite trees.

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2 Aug. Paríñas, 7 Km N. 15 Km E of Talara, Dpto. Piura, Perú.

3113 sk. 1/10 clear
♀ o.n.c. Campylorhynchus fasciatus ^{pallascus} sl. fat, 26 gms.

Top of 20' mesquite, rapidly moving branch to (dead) branch as if feeding.

3114 ♀ o.n.c. Lepidocolaptes souleyetii ^{s.}
woodhewer sl. fat, 26 gms.

3115 ♂ t. 1 1/2 Pipistrellus 75-30-5-14, 2 gms.

3116 ♀ o.n.c. Myiarchus semirufus
flycatcher sl. fat, 19 gms.

3117 sk. 1/5 clear
♀ o.n.c. Icterus graceannae
icterid sl. fat, 34 gms.

[This is in Quebrada Paríñas]

Monte Grande, 14 Km. N. 25 Km. E. of Talara, Dpto. Piura, Perú.

3118 ♀ long nosed bat w. spread 360 mm.
85-10-12-16, 19 gms.

3 Aug. One of 12⁺ in low cave on slope in bare mud-slope draw.

3119 ♀ no emb. bat, v. long nose 85-10-12-17, 14 gms.

3120 ♂ t. 2 bat, v. long nose 85-10-13-17, 12 gms.

4 Aug.
4A

3121 ♂ t. 2 Myotis pipistrellus? 73-35-5-14, 2 gms.

Netted under mesquite near water trough 4-6 a.m.

3 Aug. ♀ ut. sc.
3122 ♂ 3R 2L rat (shot 20 a.m., 20' up in mesquite) 293-172-30-22, 62 g.

3 Aug. 3A
3123 ♂ t. 2 Caprimulgus longirostris sl. fat, 32 g.

Shot 15' up in mesquite tree, 10 p.m.

3124 sk. 1/10 clear
♂ t. 1 1/2 swallow sl. fat, 6 g.

Flying near mesquite trees, < 10' over ground.

4 Aug. 3125 ♂ t. 2 Pipistrellus? 76-34-6-13, 2 1/2 g.

3126 ♀ no emb.
(yellow or.) Myotis 85-36-9-14, 5 1/2 g.

Both netted among mesquite trees about 8 p.m.

5 Aug. 1 emb.
3127 ♀ C-R 19 bat, long nose 65-7-10-16, 13 gms.

4 Aug. 3128 ♂ t. 2 Desmodus rotundus (Many ticks) 80-0-17-17, 30 gms.

3129 ♂ t. 1 " " (Many ticks) 80-0-17-17, 30 gms.

5 Aug. 3130 ♀ 1st. ov. 1 1/2 (done) Zenaidura macroura mod. fat

3130 ♂ t. 8 Desmodus rotundus (many ticks) 77-0-14-17

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Specimen Catalog

- 5 August Monte Grande, 14 Km. N. 25 Km. E. of Talara, Dpto. Piura, Peru. (starved 1 day)
- 3131 ♀ ut. 2 mm. diam. Desmodus rotundus 90-0-18-18, 29 gms.
- 6 August (In Q. Barrancos, nr. pump station)
Barrancos, 11 Km. N. 28 Km. E. of Color Blanco, Dpto. Piura, Peru.
- 3132 ♂ t. 7 Micronycteris longicaudus (among large mesquite) 58-10-9-22, 6 1/2 gms.
- 3133 ♀ no emb. Myotis 82-34-8-14, 5 gms.
- 3134 ♀ 1 x t. Desmodus 87-0-17-18, 32 gms.
- 3135 ♂ t. 2 Scotyto cunicularia (intermedia?)
Otus asio no fat, 105 gms.
- 7 Aug. Tumbezia salvini
3136 ♂ t. 1 1/2 yellow bellied flycatcher. sl. fat, 10 gms.
- also, Huey discarded ♂ t. 2, 12 gms.
- 3137 ♀ 1/2 st. ex. 1 mm. (many) Scotyto cunicularia (intermedia?)
Otus asio (shot by R. Huey) sl. fat, 125 gms.
- 3138 ♀ 1/2 st. foll. 1 mm. Furnarius leucopus cinnamomeus sl. fat, 51 gms.
- 3139 ♂ t. 7 Desmodus 83-0-16-17, 29 gms.
A skin + B body skel.
- 3140 ♂ t. 4 Burhenia superciliaris sl. fat, 350 gms.
- Shot at night in mesquite at border of wide dry wash.
10 Km. N. 40 Km. E. of Sullana, (1000 ft.?)
S. fort Co. Amotape, 40 Km. E. A km. N. Dpto. Piura, Peru
- 9 Aug. 3141 ♀ 1 mm. Phylotis 150-02-20-10, 10 gms.
- 8 SE. fort Co. Amotape, 13 Km. N. 35 Km. W. of Sullana, Dpto. Piura, Peru.
- 3142 ♂ t. 2 Scotyto cunicularia c. sl. fat, 29 gms.
- 3143 ♀ ♂ t. 1 1/2 (juv?) " " " " sl. fat, 29 gms.
- 3144 sk. ossif. ♂ t. 2 Rhynchospiza stolzmanni sl. fat, 20 gms.
sparrow
- Shrubs and small trees in dry wash; mesquite area.
- 10 Aug. 3145 ♀ ♂ t. 2 Pipistrellus 81-40-6-13, 2 1/2 gms.
- 3146 ♀ imm. " 73-36-6-12, 1 1/2 gms.
- 3147 ♀ imm. " 73-38-6-12, 1 1/2 gms.
- 3148 ♀ ad. lact. 85-45-6-13, 2 1/2 gms.
- There 4 under slab granite in Phyllodoctylus
5 km. E. of Hasloma, 60 Km. ENE of Sullana, Dpto. Piura, Peru.
- 11 August 3149 ♂ t. 2 Sakesphorus bernardi piurae ant head sl. fat, 30 gms.
- 3150 sk. ossif. ♀ 1/2 st. f. < 1. Lepidocolaptes s. souleyetii sl. fat, 29 gms.
dendrocolaptes

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11 Aug. 5 Km. E. of Las Lomas, 60 Km. ENE. of Sullana, Dpto. Piura, Peru.

- 3151 ♀ lgt. ov. 1 mm. Icterus graceannae orale sl. fat, 32 gms.
3152 ♀ lgt. ov. 1 mm. Myiodynastes bairdi tyrannid sl. fat, 55 gms.
3153 ♂ t. 3 Cyanocorax mystacalis maggie sl. fat, 130 gms.
3154 ♂ t. 2 Rhynchospiza stolzmanni fusch sl. fat, 27 gms.
3155 ♀ lgt. ov. 41 Myiodynastes bairdi tyrannid sl. fat, 62 gms.
12 Aug. 3156 ♀ lgt. ov. 1 mm. Icterus graceannae orale sl. fat, 32 gms.

20 km. NE of Sullana, Dpto. Piura, Peru.

- 3157 ♂ t. 6 Sicalis flaveola valida yellow finch sl. fat, 22 g.
3158 ♀ lgt. ov. 1 1/2 " " " " sl. fat, 25 g.

Shot in 10' mesquite by roadside in dry open country. [Abra de Huape ?]

- 13 Aug. 45 km. S. 15 km. E. of Chulucanas, Dpto. Piura, Peru. 1000 ft.
3159 ♀ 06.50. 321 R. Phyllotis 208-112-24-21 24 gms.

Next to big Cereus by rocks on slope near crest ridge (reddish rock).

15 Aug. 6 Km. N. 17 Km. E. of Olmos, Dpto. Lambayeque, Peru. 1500'.

- 3160 ♀ lgt. ov. 1 mm Sakesphorus bernardi piurae ant bird sl. fat, 32 gms.
3161 ♀ o.n.c. Lepidocolaptes s. souleyetti wood hewer sl. fat, 25 gms.
3162 ♀ o.n.c. Campylorhynchus fasciatus pallescens cactus wren sl. fat, 28 gms.

15 Aug. In bromeliad covered 20' tree, some with red flowers.

- 3163 ♀ lgt. ov. 1 mm. 14 km. E. 6 km. N. 19 km. E. of Olmos, Dpto. Lambayeque, Peru. 1900' 18
Phoebe Sayornis nigricans sl. fat, 18 gms.

15 Aug. 16 km. N. 25 km. E. of Olmos, Dpto. Lambayeque, Peru. 4300 ft.

- 3164 ♀ o.n.c. Tyrannus melancholicus obscurus kingbird sl. fat, 41 gms.
3165 ♀ no emb. bat (myotis?) 86-39-9-14, 4 gms.
3166 ♂ t. 6 bat, long nose wgs pd. 390 65-0-11-14, 14 gms.
16 Aug. 3167 ♂ t. 4 bat wgs pd. 350 68-0-16-17 23 gms.

Netted 0-3 a.m. in canyon by stream near bridge.

- 3168 ♀ o.n.c. Furnarius leucopus cinnamomeus fuernarius sl. fat.
3169 ♂ t. 1 1/2 Myioborus miniatus (euthypis?) flycatcher, yellow belly sl. fat, 11 gms.

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16 Aug. 16 km N. 25 km E of Olmos, Dept. Lambayeque, Peru. 4300 ft.

3170 ♂ t. 5

bat, phyllost.

72-0-13-17, 22 gms

17 Aug.

3171

bat (*Myotis*?) (Emballonurid?)

87-37-8-17, 59 ms.

3172 ♂ imm.

bat, phyllost.

64-0-12-16, 16 gms.

above 3 in same net over small stream bordered by short grass and shrubs.
Pass [30 km. ENE of Olmos] 6500 ft.2 km W. of Alba Porculla, Dpto. Lambayeque, Peru. 6300 ft.

rare 3173 ♀ 1st. ov. fmm.

sore *Clavavis mondetura* n.

sl. fat, 106 gms.

On ground among bushes in draw near streambed.

3174 ♂ t. 1

Myioborus miniatus verticalis
flycatcher, yellow belly

sl. fat, 8 gms.

(spec)

[Corr. to 4000]

Hot Hualapampa, 2 km. S. 16 km. W. of San Felipe, In Dpto. Piura, Peru. 4500 ft.

3175 ♀ ut. 4 mm. diam.
no emb.*Desmodus*

98-0-19-18, 50 gms.

Shot in cave in S. face cliff at N. edge dry wash, 8 p.m. 50± in cave.

3176 ♂ t. 6

Desmodus

80-0-18-19, 38 gms.

18 Aug.

3177

♂ t. 4x1 1/2

(with another at cliff hole)

Aratinga wagleri wagleri frontata

236 gms.

[Huancabamba River], W. bank, where road crosses]

El Tambo, 23 km. N. 38 km. E. of Olmos, in Dpto. Piura, Peru.

[3500± ft.]

3178 ♀ no emb.

Amorphochilus
embellonurid?

66-27. 9-17, 3 1/2 gms.

3179 ♂ t. 2

"

67-28-9-13, 3 gms.

3178-9.

In rock cave, entrance 10' high, opening on hillside in arid country near river.

3180 ♀ no emb.

embellonurid?

66-28-9-14, 3 gms + (stud.)

[Huancabamba River]

18 Aug. El Arenal, 1 km. S. 6 km. W. of Panahuaca, Dpto. Cajamarca, Peru. 3000'

3181 ♀ no emb.

Phaga
bat, long nosed

69-7-11-12, 11 gms.

Netted among mesquite, 100 yds. from river.

17 Aug. Hualapampa, [as above]

3182 ♂

bat, long nosed

75-10-16-13, 10 gms.

19 Aug. El Arenal, (as 18 Aug.)*Chordeiles acutipennis* (exilis?)

3315 3183 ♂ t. 3

night hawk

no fat

10 gms

One of several flying over mesquite in early morning.

3183 - see p. 10

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Specimen Catalog
Peru

[Road to Porculla Pass]

16 Aug. 16 Km. N. 25 Km. E. of Olmos, Dpto. Lambayeque, Peru. 4300 ft.

3312 ♀ no emb. *phyllotomid* (starved in sack) 69-0-15-15, 4+ gms.

[on Huancabamba River]

19 Aug. El Arenal, 1 Km. S. 6 Km. W. of Pomahuaca, Dpto. Cajamarca, Peru. 3000 ft.

3183 ♀ no emb. *Phyllotis* 208-112-24-17, 24 gms.

no emb.;
3184 ♀ 4 enl. nipples. + elong. black & horns. (tail broken short) 190-82-23-21, 28 gms.

3185 ♂ t. 7 *Phyllotis* 189-94-22-19, 26 gms.

83-5, on rocky hillside near boulders + shrubs; semi-arid. Discard ♀ 14 gms. v. imperf.

3186 ♂ t. 4 long-nosed bat 66-7-11-14, 11 gms.

3187 ♂ imm. " " " 60-7-10-14, 8 gms.

86-7, taken in net by riverside near mesquite, first about 8 pm.

20 Aug. 3188 ♀ lg st. ov. 1 1/2 *Leptotila correuxi decolor* dove mod. fat, 146 gms.

[by road and river] [12 Km. by rd. from Pucara]
" 5 Km. SSE of Pomahuaca, Dpto. Cajamarca, Peru. 3000 ft.

(same?)
3189 ♀ ov. n. e. *Cyanocorax yncas* y. greenjay. sl. fat, 92 gms.

Arid spring, columnar cactus, pepper trees, brush, dry grass, rocks; near river.

21 Aug. Rio Chanchaya, 35 Km. SE of San Felipe, Dpto. Cajamarca, Peru. 2500 ft.

3190 ♀ ut. elong.; no emb. or sc. none (disc. ♀ 24 gms.) 208-113-27-17, 20 gms.

3191 ♀ v. imp.; ut. elong., black. " 277-152-29-17, 56 gms.

3192 ♂ t. 8x4 " not measured, 60 gms.

91-3 under brush near fence and stream in humid zone.

Discs: ♀ 43 gms, ut. imm.; ♂ 31 gms, t. 4; ♂ 35 gms, t. imm.; + 2 other imm.

[low point by roadside & clear small stream]

21 Aug. 8 Km. WSW of Bagua, Dpto. Amazonas, Peru. 1500 ft.

3193 ♂ t. 13x6 *Nyctidromus albicollis obscurus* caprimulgid (calling, on 1' high branch) mod. fat, 54 gms.

3194 ♀ lg st. ov. 1 mm. brown Otus (*Choliba*) *roboratus* no fat, 159 gms.

3195 ♂ t. 2 (same?) gray Otus (*Choliba*) *roboratus* no fat, 152 gms.

94-5, in mod. arid forest of cactus, mesquite, + a few broadleaf trees; calling.

22 Aug. 3196 ♂ t. 7x5 *Coereba flavocollis maghistrois* caeruleid sl. fat, 11 gms.

3197 ♂ t. 3 (coll. R. Hamilton) *Xenops rutilans* dendrocolaptilid sl. fat, 12 gms.

skull 2/10 clear.
3198 ♀ lg st. ov. < 1 mm. *Veniliornis callinotus major* woodpecker sl. fat, 27 gms.

3199 ♀ elong. nipples. *Glossoceryle* long-nosed bat (netted over stream) 61-6-10-16, 10 gms.

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22 Aug. 8 km. WSW of Bagua, Dpto. Amazonas, Peru. 1500 ft. [nr. km. 221 post]

3200 ♀ 1st. ov. 3mm. ^(Cheliba) *Otus roboratus* sl. fat, 162 gms.

Shot 8 p.m., calling in semi-air spraying forest. Call 7 sec. flutter, slightly rising then falling.

3201 ♀ lact. long. nips. long nose bat 72-9-11-17, 10 gms.

3202 ♀ (imm.?) " " " 64-6-11-16, 8 gms.

3203 ♀ no emb. or sc. " " " 69-9-11-14, 9 gms.

3204 ♀ lact. " " " 8 gms. 64-8-11-14, 8 gms. 64-8-11-15, 64-8-10-10, 8 gms.

3205 ♂ 1.4x5 " " " 70-10-12-16, 11 gms.

3201-5, same net over stream. also disc. ♂ 3 gms. clinging to one ♀; and 10 gm. lact. ♀.

3206 ♀ no emb. " " " 69-9-11-13, 10 gms.

23 Aug. *Sittasomus griseicapillus aequatorialis*

3207 ♂ t. 3 furred sl. fat, 11 gms.

24 Aug. Rio Utcubamba, 29 km. S. 38 km. E. of Bagua, Dpto. Amazonas, Peru. 2500 ft.

3208 ♂ t. 4x5 mm. *phyllostomid* 65-0-13-16, 20 gms.

3209, 3208 ♂ t. 3 mm. *Saltator albicollis (peruvianus?)*

3208 ♂ t. 3 mm. *Tanager?* sl. fat.

24 Aug. Rio Utcubamba, 30 km. S. 41 km. E. of Bagua, Dpto. Amazonas, Peru. 3000 ft.

3210 ♀ 1st. ov. 1 1/2 *Thraupis virens caerulea* mod. fat, 35 gms.

3211 ♂ t. 2 *Thraupis virens caerulea* mod. fat, 11 gms.

3212 ♀ v. perf., no emb. bat, phyllost. 65-0-14-16, 20 gms.

3213 ♀ bat, gls glossoph. 75-11-11-15, 10 gms.

25 Aug. 3214 ♂ t. 8 rat 26 f-135-30-20, 59 gms.

Under rocks on leafy ground edge coffee grove in canyon bottom.

26 Aug. 5 km. N 5 km. E of Pomarocha, Dpto. Amazonas, Peru. 6000 ft.

3215 ♀ 4 nips. enl. mouse 291-154-32-23, 66 gms.

Hole under rocks on mossy-ferry well drained slope in humid forest near road clearing.

3216 ♀ 4 nips. enl. mouse AKodon 198-90-23-17, 33 gms.

Under thick low bushes damp slope edge clearing in humid forest.

26 Aug. 3217 ♂ t. 6. *phyllostomid* 64-7-12-17, 20 gms.

disc. ♀ 16 gms, no emb. or lact. tissue. Netted night over trail in forest.

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Specimen Catalog
Peru

26 Aug. 5 Km. N. 5 Km. E. of Pomacocha, Dpto. Amazonas, Peru. 6000 ft.

3218 ♀ ut. imm. phyllotomid 64-0-12-16, 18 gms.

Netted over trail in humid forest. Discarded ♀ 16 gms.

3219 ♀ 1 emb. C-R 12 mm. phyllotomid, yellow eared 48-0-11-15, 14 gms.

27 Aug. ♀ 1st. ov. 1 mm. Nyctidromus albicollis obscurus

3220 caprimulgid sl. fat, 56 gms

Not calling; at edge clearing in humid forest near livestock area at midnight.

3221 ♂ t. 8 tanager sl. fat, 29 gms

3222 ♂ t. 6 Tangara nigroviridis betlepsi sl. fat, 17 gms.

rare 3223 ♂ t. 2 Campylorhamphus p. (pusilla?) sl. fat, 36 gms.

3224 ♂ t. 6 Ampelion Atalapha ampelion / rufaxilla sl. fat, 70 gms.

3225 ♀ o.n.c. Piaya Piaya cayana nigricrissa sl. fat, 104 gms.

28 Aug. 3226 ♂ t. 9 tanager Tangara parzudakii p. sl. fat, 30 gms.

3227 ♀ 1st. foll. 1 mm. Lepidocolaptes affinis (warszewiczi?) sl. fat, 33 gms.

27 Aug. 3228 ♂ t. 2 " " sl. fat, 31 gms.

27 Aug. 3229 ♀ 1 emb. C-R 6 phyllotomid, white midd. line 81-0-14-14, 36 gms.

3230 ♂ t. 3 " " " " 80-0-14-20, 38 gms.

also discarded ♂ 32 gms. t. 5 mm, ♂ 34 gms. t. 4 gms.

28 Aug

3231 bat Nyctidromus albicollis obscurus mod. fat, 62 gms.

3232 ♂ t. 6 caprimulgid " " " " , 60 gms.

32-3, red eye shine; open ground in coral area, humid forest.

3234 ♂ t. 6 bat 77-0-13-15, 22 gms.

29 Aug. Rio Chunchuca, 19 Km. S. 27 Km. W. of Jaen, Dpto. Cajamarca, Peru.

3235 ♂ t. 6 Artibeus 90-0-16-20, 52 gms.

3236 ♂ t. 9 Artibeus 94-0-17-21, 62 gms.

30 Aug. Aulapampa, 2 Km. S. 16 Km. S. Felipe, in Dpto. ^{Piura} ~~Cajamarca~~, Peru. 4000 ft.

3237 ♀ no emb. glossophagous bat 75-10-10-15, 12 gms

31 Aug. 3238 ♂ t. 5 phyllotine 199-112-24-19, 21 gms.

Specimen Catalogue

- 30 Aug. Hualapampa, 2 Km. S. 16 Km. W. of San Felipe, ⁱⁿ Piura Dpto. Cajamarca, Peru. ^{4000'} ~~4500'~~
- 3239 ♂ *Amorphochilus emballonoid* 66-29-7-13, 2 1/2 gms.
- 3240 ♂ t. 2 *glossophag. lat* 73-12-11-15, 10 gms.
- 3241 ♀ lact. " 65-6-11-14, 11 gms.
- 3242 ♀ no emb. *Hystotus* 118-59-
♂ or sc. *lat, v. long-eared.* 49-56-10-32, 7 gms.
- 31 Aug. Abra Porculla, 16 Km. N. 27 Km. E. of Olmos, ^{Piura} Dpto. Cajamarca, Peru. 6500 ft.
- 3243 ♂ t. 2 *Zonotrichia capensis peruvensis* sl. fat, 30 gms.
- 6' bushes in stream valley in grassland NW of pass. Saw many. One of 4+ in ga.
7 Km. N. 21 Km. E. of Olmos, Dpto. Lambayeque, Peru. 2500 ft.
- 3244 ♂ t. 4 *Phloeceastes* ^{woodpecker, *Serpaptes*?} *gayaquilensis* sl. fat, 186 gms.
- 4 km. on road to E. of iron bridge. Wetter patch in bottom in arid broadleaf zone.
- 3 Sept. 3 Km. E. of Morrope, Dpto. Lambayeque, Peru. 100 ft.
- 3245 ♀ 8 mps. elong. *Paralomys gerbillus* 173-87-20-17, 26 gms.
- Discarded ♂, testes 3 mm., 9 gms., taken at site of 3246 on same night.
- 3246 ♀ ot. scars, 2R 2L. *Paralomys* 160-76-18-17, 16 gms.
- 2 Sept. Morrope, Dpto. Lambayeque, Peru. 100 ft.
- 3247 ♀ lact. *Carallia?* 68-9-10-14, 11 gms.
- 3248 ♀ no emb. or lact. *Carallia?* 64-8-10-14, 10 gms.
- 47-8, daytime in adobe house hanging from bamboo ceiling in dark room. Discarded imm. ♀ 7 gms., imm. ♂ 7 gms.
- 3249 ♂ t. 7 *Desmrodus* 79-0-19-20, 31 gms.
- In room with 3247-8 and a few others, in adobe house.
- 3 Sept. 3 Km. E. of Morrope,
^{in formalin}
3250 ♂ t. 7 *Paralomys gerbillus* (before 10:30 p.m.) 167-86-19-17, 17 gms.
- 3251 ♀ ut. bulge 3 mm. R+L, *"* (after 10:30 p.m.) 150-70-17-16, 15 gms.
- ♂ t. 7 + 1 scar L. *"*
Not lact.
- 5 Sept. 35 Km. SE of Chiclayo, Dpto. Lambayeque, Peru. 300 ft.
- 3252 ♂ t. 2 *Myiophobus fasciatus rufescens* *flycatcher* sl. fat, 9 gms.
- 3253 ♀ 1st. ov. 1 mm. *Muscivora brevicauda* sl. fat, 12 gms.
- 6 Sept. 7 Km. SSE Mocupe, Dpto. Lambayeque, Peru. 300 ft.
- 3254 ♀ no emb. *Mus musculus* v. fat. 150-75-16-19, 15 gms.
- 3314 ♀ 1st. ov. 1 mm. *Campylorhynchus fasciatus pallescens* *cactus wren* sl. fat, 31 gms.

Koford
1967

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Specimen Catalog

Peru

[Valley of Rio Pira]

8 Sept. 1 Km. N. 12 Km. E. of Pariacota, Dpto. Ancash, Peru. 8500 ft.

- 3255 ♀ 3R, OL. *Onychomys*? 213-124-23-17, 18 gms.
ut. sc. big *Phyllotis*.
Base 2' old rock wall, overgrown by dead shrubs, top dry 20% W. slope, 6' from
- 3256 ♂ t. 5 *Phyllotis* 213-111-27-21, 31 gms.
1 ft. inside hole in 3' up in 10' rock wall, 10% mossy; mod. bushes + herbs at base.
slim ut. horns. (tail bone naked)
- 3257 ♀ no emb. *Phyllotis* 204-108-26-21, 28 gms.
Under green brush on dry partly gravelly W. slope, in brush area.
- 3258 ♂ t. 10 *P. magister* 212-121-27-22, 48 gms.
27-22 48 gms.
stom. cont. pale olive green.
Under 1/2 dead red-flowered low shrub on dry 20% W. slope, mod. gravelly.
- 3259 ♀ ut. horns slim *Phyllotis magister* 212-104-27-22, 38 gms.
Caecum green-brown; stom. cont. olive pale green + off-white.
Base old rock wall overgrown w. brush, incl. thick 3/4 dead red-flowered; mod. dry W. slope
- 3260 ♂ t. 4 *P. magister* 219-119-27-21, 37 gms.
stom. cont. whitish, mostly seeds (fruit?)
Under thick 1/2 dead red-flowered brush; scattered 8" rocks 10 ft. away.
- 3261 ♀ v. imp. *P. darwini* ? - ? - 26-20, 26 gm
slim ut. horns
Under fine leaved brush on dry slope where few rocks. St. cont. whitish green.
- 3262 ♂ t. 7 *P. darwini* 223-118-26-22, 34 gms.
Foot 4' high x 8' rock wall partly covered w. drying herbs. Mod. dry slope
tail broken off
- 3263 ♀ no emb. *Marmosa* -117-20-15-23, 16⁺ gms.
Base trunk large brush, 20% mod. dry slope; rocks, dry grass, bushes near.
- 3264 ♂ t. 4 *Akodon* sp. 167-77-21-13, 17 gms.
Crest of mod. dry brush slope; no grass, some rocks. Base of brush. Mod. dry W.
- 3265 ♀ o.n.c. *Asthene (pudibunda?)* sl. fat, 18 gms.
furward
Snap-trapped under brush on mod. dry W. slope.
- 3266 ♂ t. 7 x 3 *Reithrodontomys pentlandi oustalei* sl. fat, 272 gms.
Irides brown, legs pale yellow.
One of 2 flushed brush + dry foil W. slope, 20% mod. dry slope; broken eggs found near by R. wall.
- 3267 ♀ lact.; *Phyllotis magister* (?) 247-119-27-24, 53 gms.
ut. sc., 3R, 2L
Before 10 pm. on dry hillside at base old rock wall partly covered with bushes; a large *P. darwini* in trap 15' distant in same wall.

Discards - P. audium

9 Sept. 1967, a.m.

- ♂ 220-119-27-20, 32 gms. t. 4
Stom. cont. $\frac{1}{2}$ green, $\frac{1}{2}$ white. (rock wall)
- ♂ 31 gm. t. 4
- ♀ 30 gm. ut. inact. (rock wall)
- ♀ 18⁺ gm. imm.
- ♀ 25⁺ gm. no emb. or scars. Rock wall, under bush.
- ♂ 24 gm. imm.
- ♀ 18 gm. imm.

Discards ⁹ 8/9 p.m. (6) and 8/10 a.m.

P. audium

- ♂ 35 gms. t. 6 Cyst tail.
- ♂ 18 gms. imm.
- ♀ 27 gms., repro. imm.
- ♀ 28 gms., ut. inact. Stom. cont. green
- ♀ " " " " 20% green
- ♂ 36 gms. t. 5.
- ♂ 28 gms. t. 4
- ♀ 30 gms.; ut. scars 1R 3L; lactating
- ♂ 42 gms., t. 9 ♂ 42 gms.; t. 9X6 mm.
- P. magister

♂ 20 gms. imm.

♂ 32 gms. t. 5

♂ 33 gms. t. 6

Oryzomys

♀ 22 gms. 6 ut. bulges, 3R 3L, 4 mm. diam.

♀ 16 g. - no emb. or lact. tissue

K. Ford.
1967

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Specimen Catalog.

[Valley of Rio Pira]

8 Sept 1 Km. N. 12 Km. E. of Pariacoto, Dpto. Ancash, Peru. 8500 ft.

3268 ♂ t. 6x3 *P. magister*? 222-101-30-25, 59g.

Stom. cont. green. Under bushes on mod. dry slope w. some rocks, near open wady flat.

3269 ♀ ^{ut. sc.} lact. (very) 3R2L (approx.) *P. darwini* (?) (soles pink) 254-136-25-23, 33gm.

Ut. horns wide & bloody. Same wall as 3267, 15' distant, but in hole in rock wall.

3270 ♀ 3 emb., 2R1L, CR2C *Phyllotis d.* 224-121-24-22, 52gm.

3271 ♀ ^{4 emb.,} lact. 3R, 1L; *Phyllotis d.* 224-124-26-22, 40gms.
C-R11

Stomach ^{partly} cont. bright green, part white.

3272 ♂ t. 7x4 *P. darwini* 227-116-26-22, 39gms.

9 Sept. Tunga fleas in tail (collected). Bushes on mod. dry gravelly slope, just below open flat.

3273 ♂ t. 7 *Phyllotis magister* ?-136-29-25, 60gms.
(hd. partly eaten)

Foot 6" diam. stubby dead tree & green brush on gravelly slope.

3274 ♀ ^{shell broken} ho emb. (inactive) *P. mag.* soles dark 39gms.

Buffly spot chest (shown in head-draw w. *P. darwini*). covered w. brush.

3275 ♀ ^{no emb.} skin ut. horns *Marmosa* [v. fat tail] 201-106-15-23, 23gms.

Foot old rock wall on 20% W. slope w. sparse brush, semi-arid.

3276 ♂ t. 7 *Oryzomys* 225-132-25-17, 27gms.

(semi-arid brushland)

Discarded ♂ 21gms, t. t. Pale rocks overgrown by bushes at edge grazed open flat.

10 Sept. 3277 ♂ t. 17x10 *Phyllotis magister*? 272-126-29-24, 89gms.

Stom. cont. white & brown mixed; full.

3278 ♂ t. 5 *Marmosa* 228-121-16-26, 35gms.

Bushes on crest mod. dry slope w. some rocks.

3279 ♂ t. 6 *Phyllotis magister*? 241-119-29-23, 53g.

3280 ♂ t. 7 *Phyllotis darwini* 224-117-26-21, 42gms.

Foot of rock wall (old) on mod. dry brushy 20% slope; semi-arid.

11 Sept. 3281 ♂ t. 6.4 *Marmosa* 216-113-17-22, 25gms.
(Capt. 9 Sept., died 11 Sept.)

Discards:

Tinco 11 Sept. 1967

Phyllotis andinum or darwini

♂♂	37 gms., t. 3	♀♀	34 gms., ut. erect.
	33		27
	30 gms., t. 3		21
	36 t. 3		24
	36 t. 3		26
	31		31
	28		
	34, t. 4		

AK. boliv.

no emb. or scars	♀♀	♂♂
	20 gms., ut. elong.	24 gms., t. 6
	22	22 gms., t. 7
	15	20, t. 4
	17	
	17	16 gms.
	18 ut. inactive	

Callan, 13 Sept.

Discards:

P. pictus

♀ 40 gms. - no emb. or sc.
♀ 43 ut. 8 mm wide; 2 impl. sites, 1 L, 1 R.
♀ 27 ut. imm.
♂ 41 gms., t. 10
27 t. 5
27 t. 13

AK. bol.

♀ 159-63-21-14, 21 gms. no emb. or scars.

P. subl.?

♀ 14 gms., imm.
♂ 17 gms., t. 6
♂ 15 gms., t. 4
♂ 14 gms., t. 3

Ko Ford
1967

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Specimen Catalog Peru

11 Sept. Tinco, 2 km. S. 15 km. W. of Huaras, in Dpto. Ancash, Peru. 12000 ft.

3310 ♂ t. 4 *Phyllotis d.?* 222-119-26-23 38 gms.

Discarded 8 other ♂♂, wts. 28-37 gms.
Largest of 9 ♂♂ taken near rocks, bushes, grass, ferns, near stream.

3282 ♀ uterus inactive *Phyllotis d.* 215-112-24-22, 34 gms.

Largest of 7 ♀♀ taken (wts. 21-34 gms, discarded). Wet inter near stream, under rocks.

3283 ♂ t. 4 *Akodon l.* 170-71-20-14, 28 gms.

12 Sept. Disc. 4 ♂♂, 16-24 gms.; 6 ♀♀ of 17-22 gms. No uterine activity in any.

3311 ♂ t. 1 *Patagona gigas peruviana* no fat, 22 gms.

3284 ♀ ov. not evl. *Agriornis andicola albicauda* sl. fat, 82 gms.
ground flycatcher

On rock wall + ground on dry grass (grazed + cultivated) slope, no bushes.

3285 ♂ t. 7 *Phyllotis magister?* 242-126-29-22, 50 gms.

no bushes within 100+ meters.
Horizontal 4" hole in cut earth next to rock wall on short dry grass + weed slope; ^
[about 1 km. to W. of pass]

13 Sept. Callan, 2 km. S. 11 km. W. of Huaras, Dpto. Ancash, Peru. 13000 ft.

3286 ♀ lact.; ut. scars 3L 2R *Phyllotis p.?* 209-91-25-24, 51 gms.

3287 ♂ t. 10 142-80-24-22, 49 gms.

3288 ♂ t. 7 *P. sublimis?* 153-65-19-29, 25 gms.

3289 ♀ ut. inactive *Oryzomys?* 142-119-22-15, 10 gms.

3290 ♂ t. 7 *Ptiloscoptes resplendens* mod. fat, 228 gms.
Kanellus

(stomach contents grass-grain.)
86-90 in puna grasslands; clumps, boulders, rock wall, rivulets; few bushes.
[5 km. by road N. of Recuay]

14 Sept. Rio Santa, 20 km. S. of Huaras, Dpto. Ancash, Peru. 10000 ft.

3291 ♂ t. 7 *Phyllotis* 241-124-26-22, 42 gms.

3292 ♂ t. 3 *Oryzomys* 203-106-25-16, 19 gms.

- 91 at rock wall culvert; 92, shrub on slope. Mod. dry rocky shrubby area, near river.
[same as 11 July, 1967]

13 Sept. 1 km. N. 12 km. E. of Pariacoto, Dpto. Ancash, Peru. 8500 ft.

3293 ♀ ut. inactive *Marmosa* 205-110-15-14, (18 gms.?)
Capt. 10 Sept. - died 13 Sept.

3294 ♀ ut. inact. " 209-111-16-12, (18 gms.?)
Capt. 10 Sept. - died 13 Sept.

3 Sept. 7 km. SSE of Mocupe, Dpto. Lambayeque, Peru. 300 ft.

formalin 3295 coral snake (late afternoon on sand at foot shrubby sand hill)

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Koford
1967

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Specimen Catalogue
Peru

15 Sept. [Rachacoca], 45 km. S. of Huaras, Dpto. Ancash, Peru. 11000 ft.

[Puna zone grassland, near Rio Santa]
local name

3296 ♂ t. 4 *Hesperomys*? 113-42-19-18, 12gms.
tail broken skt.

3297 ♂ t. 9 mouse 143-54-18-19, 22gms.

3298 ♀ lact. mouse 145-63-19-20, 19gms.

14 Sept. 96-98 in traps at base rock walls on dry bunchgrass slopes.

3299 ♂ t. 25. *Anas flavirostris* *oxypterus* wt.?

On Lake Tapara (sp.?), w. another adult and 5± juvs., incl. 2

3300 ♀ juv. (dummy) " " " 180gms.

15 Sept. 3301 ♂ t. 5 (but juv.?) *Nothoprocta ornata branickii* sl. fat, 225g.
(apparently not known this far north.)

In dense high bunchgrass on 10° slope w/o bushes.

14 Sept. 3302 ♀ foll. uniform, 1 mm. *Ternia melanoleuca* (on Lake Tapara) only mod. fat, 180 gms.

16 Sept. Lake Conococha, 75 km. S. of Huaras, Dpto. Ancash, Peru. 12000 ft.

3303 ♂ t. 8 *Phyllotis* 223-106-27-22, 44gms.

3304 ♂ t. 8 " 195-87-24-23, 42gms.

ut. enl. (2 mm. wide);
3305 ♀ no emb. or sc. " 227-108-27-23, 50gms.

[inland dry side] 1000 ft.
18 Sept. Lomas de Hachay, 20 km. N. 7 km. W. of Chancay, Dpto. Lima, Peru.

3306 ♂ t. 8 *Phyllotis* 198-102-21-23, 23gms.

Flea cyst removed R side nose; preserved. Under rocks on slope.

3307 ♀ ut. elong.; no sc. " 202-111-22-24, 22gms.

3308 ♂ t. 7 " 197-107-21-24, 21gms.

06-08 under granite boulders in lower green forb zone of cactus dry area.

18 Sept. " , 20 km. N. 11 km. W. of Chancay, Dpto. Lima, Peru. 300 ft.
Cuniculcauda

3309 ♂ t. 7x2 *Thiencorus ruficircus* (sp.?) mod. fat, 47 gms.

Merry in open gentle slope, short forb; flight displays and calls.

(Nos. 3310 3311 3312 3313 3314 3315
3310-3115 - See: p. 16, top; p. 1, bottom; p. 10, top; p. 6, bottom; p. 13, bottom; p. 9, bottom.
3311 B p. 16)

7 Sept. 7 km. SSE of Morupe, Dpto. Lambayeque, Peru 300 ft.

3316 skull only big lizard

14 Sept.

ad ♂ 42 g. - cat.

Phyl. darw.?

disc.: ♀ 19 g., imm.

♂ 21 g., imm.

♀ 22 g., imm.

♂ 28 g., t. 3

♂ 26 g., t. 2

♀ 21 g., imm.

Oryz.? : 4 19 g., ♂

cat.

disc.: ♂ 16 g., t. 2

♀ 15 g., imm.

To R. A. ...

Km. 349 ± fr. Lima - 25 Km. fr. Recay. - Racha Coca (local name)

... 120 x 250 m

120 x 400 m.

Anas crist. crested - coll.

" discors teal. - coll.

Grebes - gulls - ibis

camp - rock walls - set 20 25

15 Sept. - catch 10 white ear tuff mice

... 1 ... (disc.)

shot 1000 yps. grass

Disc. white ear t. mouse	{	16	t. 3	♀♀: 16 g.
		♂ 15 gms. - t. 3	15 g. - t. 3	
		14 g. - t. 4	14 g. - t. 2	
		11 g. - t. 2	= 6	
				15
				14 - ut. in act.
				+ 4
				9 - imm. = 2

To Lake Conococha 4000 m. - 82 Km. fr. Huancayo, 132 Patac.,
33 km. fr. camp. Trout. 31 to Chivian

Fr camp, bridge 15 km.

Geese - ducks - shore birds

Rock walls

Catalog

Peru

18 Sept. Lomas de Lachay, 20 km. N. 7 km. W. of Chancay, Dpto. Lima, Peru. ^{1000ft}
 3317 skull only; no lower jaw. Canepatus

14 Aug. 5 km. N. of Talara, Dpto. Piura, Peru: (beach)
 3318 ^{pickup} skull only allbatron

13 Sept. 1 km N. 12 km E Poiracoto, Dpto. Ancash, Peru - [±] 8500 ft.
 formalin capt. 10 Sept. - died 13 Sept.
 3319 ♀ Marmosa 202-109-15-24, 20gms.

— End Peru trip, summer 1967 —

16 Sept. Frost-ice

Traps - 22 by rocks & walls, lake to 300' above

11 Phyll. - uned tail.

1 w. Astrogalus? in mouth.

Disc.: ♀♀

♂♂

35g. joined nipples, no emb.,
not lact.

41g., t. 7

31g. - ut. in art.

43g., t. 9

33g. - ut. in art.

39g., t. 7

Green stem, & racc. cut

40g., t. 8

37g., t. 6

Departed: Down dry rocky canyon to coast, Patulca - 632 km.

Thru Chasquitambo, 76 km. fr. Camp.

Upper - rocks, tola, streams.

Lower - corn, cane

Fog evc - to bedside highway - Bernoff 10 1/2 km. post.

17 Sept. Calm - low fog, rising. No cv. use since us.

4 Candors

Burrows.

Viscacha sight (RH sam 3)

Steel tr. + snags.

sun: 10 a.m. - 11 a.m.

3-4 p.m.

18 Sept. 4 mice (22 tr.)

Hummers.

disc. ♂ 17g., t. 6

bat up 3. (flea cyst nose of ♂)

Foggy

Visit sta. - green! 1 thick. 2nd br. strip.

coll: Thinoc.

saw - shorebirds, geositta

To Lima

C. B. Koford

1967

Journal

Peru

Koford, Carl B.
1967

Journal
Peru Trip

26 June 1967

To Panama City, Panama

Purposes of trip were studies of distribution and ecology of various species in northern Peru, and training of 3 go students: Robert Hamilton, Ray Huey, and Fred McCallum. Also, to assemble equipment for future trips by others. I departed from Sacramento airport 0630 for San Francisco, where I met Hamilton. We left 0800 on PAA flight 515 to Panama via Los Angeles and Guatemala. McCallum joined us at Los Angeles. Arrived Panama 1710 and stayed at Hotel International near C.Z.

27 June 1967. The 3 of us took 0730 train from Balboa to Frijoles station. Then to Barro Colorado Island in boat with 12+ others, including Chichi - now grey and oldish. The trip was about the same as 10 yrs. ago. Stanley Rand lived on BCI and seemed to be in charge of research there. Labs full of people, including 2 working on Cebus monkeys. We walked to summit of island, out to AVA 13, and back. Usual early afternoon rain. Big almendro (?) trees in pink blossom. Departed 3 p.m. for Frijoles, Panama, & hotel (\$5 each/night).

28 June 1967. To airport and took 0630 Braniff fl. 979 to Quito, Guayaquil (where Huey joined us), and Lima. Went to Humboldt House, Miraflores, where Drs. Hans & Maria Kaepeke expected us. Lodging at \$1 per day, big room to spread specimens, equipment for the borrowing. My shotgun (1963 purchase) was there. At this season weather overcast, drizzly, and cool. Visited



Journal

28 June 1967Lima, Peru

Jorge Milberg, Universal Travels, our mail receiver and business adviser. Exchanged money (about 26/\$1) and shopped, starting to look for a field car. New Ford panel was about $\$100,000$ - about 2x price in U.S.

29 June 1967. We rented small car from Milberg and drove toward Chosica. Collected a few birds on S. side road near Paña. Drove up a high rocky hill being developed in Inca style into a residential park. Tillandsia hills present but contained few vertebrates. Many birds around cotton fields, including a black form of vermillion flycatcher.

30 June 1967. More leg work in Lima. Purchased maps at Inst. Geogr. Militar, located at old Lima airport at head Av. Correo, near big Sears store at San Isidro (Av. de la Republica). Started gun permit negotiations at CAMEC, also at ^{old} airport building. Initiated purchase of 1963 VW panel truck.

1 July 1967. More shopping and preparations. Then in Milberg's little Humber, we drove N. on Panam Hwy. ^(mostly sandy desert here) to about km 88, then inland on Sayan-Churin road to km. 10 1/2, then on dirt road to N + W ^{(.2 km) (.9 km)} to dry side of Lomas de Pachay coastal hills. Granite boulders, heavy use by goats, clumps of cereus-type cactus, and little other vegetation. Very dry aspect. We had not yet received our shipment of eqpt. from U.S., but we had local materials so we set out [to W., left peak ; right peak ]

Koford
1967

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Journal

Peru

2 July to 6 July, 1967

Lomas de Lachay, Dpto. Lima,

(Set 12, under edge boulders) several ordinary mouse traps each (our ^{equipment} shipment from states not yet arrived) and camped. ^(CHK 3037, 3038) Caught was 2 *Phyllotis*.
Temp. range 34°-65°F. [±]

We saw burrowing owls, *Aythya*, and few other birds.

Desolate appearance. Many empty shells of large spiral land snails. Old *Aythya* *cactorum* nests in branches of *Cereus* cactus. Big rock slides of

boulders up canyon (to W.), with possible vesicaria sign. Ground much beaten and trampled by goats, ^(2-4' *Cereus* cactus most conspicuous vegetation) and shrubs browsed to nubbins. No water near. many fox and lizard tracks.

We drove back to main Panamerican highway and turned into hills on road to ^{secondary} Bosque de Lachay. This led

up gentle open slope a few kilometers (many ^(very dry aspect, even here) *Geositta* burrows) to a fence and gate. Then

^{up gentle slope} past weather instruments, through open eucalyptus grove (many *Pyrocephalus* and *Zonotrichia*), through 2 more gates and down to headquarters. Met the

caretaker, Montero, & a Lima Lima official who got

former to let us use small adobe house there for

camp. Area much beaten by goats or other stock, but some ^{lichen} bearded and bromeliaded trees up canyon from headquarters. This is a reserve of the department

of Forestal y de Caza (Corner ^{office at} Salaverry & Cuba, in Lima). ^(Lachay)

Dear Amador & many others have visited the place, and the Kaepchies did much work here. We had seen a condor

over dry side of hills. I returned to Lima evening of July 3,

leaving the 3 to work with about 25 traps and one

shotgun. Caretaker, Montero (sp?), said rains due but later.

Lomas de Lachay
July 7

Disarded

Passer domesticus

Zonotrichia capensis 07 L. 6

Journal

Do to. Lima

Lomas de

Lima to Lachay, Peru.

7 July 1967, Fri.

Departed Lima 0230 in ^{purchase} VW panel truck & drove north on Panamerican Highway to Lomas de Lachay, 6 km. to E. of km. 90 on ^{Panamerican} highway. Found Huey, Hamilton, & McCallum well, with small collection birds & mice. They said *Pyrocephalus* just starting to breed, but *Zonotrichia* not, still in flock. There, *Scoritta*, *Speotyto* among commonest birds. Foggy every day, & vegetation much beaten up by goats. They finished preparing specimens & parked, while I hiked hills for 2 hrs. Uphill from houses (at about 900') trees sparsely spaced, laden with *Tillandsia* and moss, so branches had clutlike appearance - weird in fog. Many large boulders & rock outcrops. (Huey had collected many geckos, prob. *Phyllodactylus*, at night.) Little green herbage because of goats & lack rains (late this year; ^{normally} ~~should~~ raining now) (Cartaker said driest Jan. - Feb.) Flushed from nest a mourning-dove sized dove. It did distraction display, flopping, walking, to 100' away upslope. On stick nest 15' up was single spool, well feathered, light at medial bend wing (ad. no white in dorsal view; brown body, gray wings.) *Pyrocephalus* - saw none of black phase, only red. Esp. common in small eucalyptus stand near road on crest ridge. Geckos - I found 3 in lifting about 60 small rocks atop rock walls, near or below level of houses (900'). Saw 1 luteo-sized hawk. ^{Speotyto} ~~Barnard~~ common below 900'. Some in pairs. Some at mouths ^{burrows} ~~burrows~~ on bare hillside. White areas head & back prominent. / Scorpions common under rocks. Saw no lizards. Cartaker, Montero, said vicuña present high up on dry side. Too much disturbance by dogs, people, goats, radios, domestic pigeons, etc. near houses for pleasant operation. We departed about 1300 and drove north. Dry sandy rocky country until valley of Rio Huara, which was flat and green

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7 July 1967

213 in Dpto. Ancash
To km. 203, N. of Paramonga, Peru

Tillandsia

with many crops. Cattle, casahuate, eucalyptus. We drove to edge rocky beach near Pampa at km 203. Saw brown whale, cormorants, pelicans, + I picked up a toothless human skull (deformed occiput). Huey caught two *Tropidurus* lizards in ^{9±"} rounded boulder beach rocks, + Hamilton a snake. We drove on through *Tillandsia* hills and camped at base of one near km. ²¹³ 203. Larger leaved + smaller leaved *Tillandsia* only apparent plants. Saw fox, lizard, + rare mouse tracks. I set 40 snap traps on hillside near *Tillandsia* on sandy ground, + a few near red rocks nearby. [I caught 0 tho one mouse track passed right to trap; Huey set traps too + caught one *Mus*.] Camped there at 200' elev. Hamilton shot a *Speotyto*.

8 July 1967. Picked up traps. ^{Huey} Ray caught a few geckos. Clutch cable repairs, then difficulty in driving out in fine sandy ground. Birds were rare in *Tillandsia* area, tho scorpions + crickets common. Departed 1230, when still foggy (drizzly early a.m.) Drove N. thru sand, rocky *Tillandsia* hills, with occasional view of ocean. Sand dunes on km 225. a tunnel in rock. Stopped at km 238 and inspected sandy beach where ²⁰⁰⁺ many *Larus modestus* feeding on sand at edge wave wash. Several skeleton pelicans in 200 meters, and some cormorant + *Sula* bodies too. Drove on and at km. 254 saw condor soaring over barren hills; later another single one. Huarmey area (km 277) another flat green valley w. many *Coragyps*. Corn growing. Many ^(v. flycatcher) *Pyrocephalus*. Many sand dunes on km 350. Another flat green valley in area of Casma, with corn prominent. Barren rock hills stuck up thru greenery. Stopped there. Then took road toward Huancayo and drove thru scattered ranches w. corn, avocados, papayas, yuca, occasionally

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8 July 1967.

Casma - Huancabamba Road, Dept. Arequipa, Peru
about 7 mi. before

near rushing 20' stream. Passed thru two small towns and camped beyond Paríacoto ~~on road~~ at narrowing of valley near stream at 3000', 52 km. from Casma.

Saw *Myotis* (?) in evening. *B. tris* & *mothulid* common near road up.

Clear sky, bright stars, & cool night. Set no traps - too late.

To crest of Cordillera Negra

9 July 1967 Morning fog to about 3000'. This area has large cereus cactus

widespread on rock slopes; shrubs, peppertrees; bananas, corn crops.

Breezy dry slopes to N. Departed 0800 and drove uphill toward Huancabamba.

Paríacoto 1360 m., small town. Adobe houses, corn crops, green valley.

A few km. beyond we saw 50+ green & red large parrots in flocks 10-20,

in avocado (?) trees and flying. Road went upstream. Stopped at about

4800' - slopes steep, cereus and rocks on dry grass slopes. Swifts

flying (white area below). Peppertrees. Jointed cane growing nr. stream. At

6000' still much cultivation in bottom, 100-300 yds. wide. Eucalyptus,

pepper trees. 6000' green flat. A man with several 8" trout, fishing. Many

swifts. On up dirt road. At 9000' saw large green hummingbirds, some

feeding on common red-flowered shrub. At 12000', 2 juv. sparrow hawks

in hole in bank 20' above road; fully fledged. At about 12500', last barley

fields. Summit 5 km beyond (120 from Casma). Area short dry grass w.

rock outcroppings. Could look down on Huancabamba to E., & up at the

Cordillera Blanca, splendid line of 6000 m. icy peaks - we all took pix.

Saw *Xanthocephalus* *ptiloscelys* in gp. 10+. Returned 5 km down road to 12500', where

we camped in area grass, short brush, & rock outcrops & walls.

I set 35 traps upslope. Huey & McCallum set nearer camp. Hamilton

floored by the altitude, cold, & dryness. We all felt headachy &

a little dizzy when exerted. Heard toad calling at night.

10 July 1967. Cold night but calm. My traps held 8 mice of 4 or 5 spp.

5 were same, & in same circular rock wall (like 3042). McCallum got

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10 July 1967

Hd. Rio Pira, Dpt. Ancash, Peru

one ^{possibly} ~~apparent~~ P. magister, large w. faint buffy chest spot (+ hairier ears?)
 than P. darwini. Discarded P. darwini, 26 gms., 4 emb., C-R 8mm. (coll.
 McC.). Sent P. darwini taken by McC. and Huey, & some put up. / We

put up specimens, then moved down road, passing through
 some bromeliads on cliffs areas, rock grass tola mixture. The
 narrow valley + habitations made finding camping spot difficult.

about 8500 ft. aspect (= 1 km. N. 12 km. E. of Paria coto)

Camped at 8000' by road on N. slope. Brushy area, some short grass,
 remnants very old rock walls, dry + poor looking tho cattle looked
 healthy. Many hummingbirds, Zonotrichia, fringillids, + others. Saw
Nothoprocta p.

tinamou. Arrived 1630 and set traps. I set 26 traps upslope
 from road in brush + rocks, the little sign. Much use by
 cattle + people walking. / E. of Paria coto, Rio Pira drainage, 8000' ft.
 of 7 spp.

11 July 1967. My 26 traps held 13 animals, + others sprung or pulled
 out, so rich in small mammals. Mine included a Marmosa +
Onychomys. We put up specimens. ^{McC. and} Hamilton Huey had P. darwini?
 in traps. Huey got many frogs last night near irrigation ditch.
 In afternoon the boys put up net and also shot birds. At least
 4 kinds hummingbirds present, and doves, turdids, finches - very
 rich tho poor looking vegetation. Hamilton shot a young tinamou,
Nothoprocta pentlandi + saw adult with small young. I found
 nest of hummer w. 2 nestlings. In evening I drove 5 km. up
 road and set 28 traps near small stream, + on dry grass-
 rock-cereus hillslope. Clear night again.

12 July 1967. Clear night. No bats in 1 net set. Traps held 9
 animals, incl. 2 akodon, 1 marmosa (imm.), 2 small mice, + Phyllotis
darwini? Sent traps in damp area rocks + shrubs sprung, as by
 larger mammal. Near 8000' camp many hummingbirds (green w. blue

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8500 ft. PERU.

12 July 1967

1 km. N. 12 Km. E. Paria coto, Dpto. Ancash, A

tail; see Hamilton spec.) displaying + chasing. Also one with 2 long white tail feathers. *Bonaticchia* common, + most often in net. they seem to avoid sand colored net in sunshine. We put up skins + departed about 1200 to descend toward Casma. Bathed in creek. Shopped in Casma and camped about 1 km. to N. in barren rock + sand hills near coast.

13 July 1967. We drove on past Chimbote (many fishing boats; bustling adobe town; pelicans in road feeding on garbage) to Trujillo. Shopped + changed oil, repaired tire. On to 5 km NE Parasway and camped on sandy flat near green area shrubs + mesquite. I set 20 traps along green bushes of thorn fence. Dpto. La Libertad, Peru
5 km NE of Parasway,

14 July 1967. At 2 a.m. I ran trap line + found 1 *Alouatta palliata* and one 9 gm. *Mus* (discarded). Shot *Caprimulgus* on nest w.

egg. Saw oven birds, vermilion flycatcher, black vulture, cooter wren, others. Drove on to Chilayo. Shopping + repairs. about 25

km. S. Chilayo, area of loose sand piles crisscrossed with large hard (zapote) shrub. Pileas have many lizard-like lizard tracks, but we found none at noon - small holes went into sand. Dead *Furmaria* by road. / Late p.m.

drove to Lambayeque + turned off ^{w.} toward Moquegua for 18 km. Camped in sandy area with *Prosopis* + *Capparis* bushes. Many lizard tracks. By 8 p.m., McCallum had a mouse, + Huey a gekko. I set 30 snap traps near bushes. Nothing by 11:30 p.m.

15 July 1967. My traps held 2 mice. Many mocking birds in *Prosopis* trees. Drizzly light rain at times in night, + cumulus stratus clouds morning. Collected a few birds. Then drove to Chilayo for supplies +

realt, then on north and camped ^{at Km. 815} 11 km. N. of Jayanca, Dpto. Lambayeque.

We set traps in cut + beaten brush and thorn fence near a sandy wash. Many kinds of small birds present, and boys saw one or more

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15 July 1967.

Nr. Jayanca, Dpto. Lambayeque, Peru

fores. a hot roast under bridge nearby. about 2 a.m., Huey + I visited the bridge and took 5+ gophers from the concrete ceiling. This was ^{Saturday} Sunday.

16 July 1967. We drove on toward Piura. Near Motupe I shot a ^{big} mouse ^(?) + jag.

We saw large + small parrots. Otherwise most area dry short grass, mesquite bushes, + unattractive. About where enter tropical scrub on Holdridge map, soil became sandy with widespread clumps. Then, about 10 km. before Piura, sand became with occasional mesquite to S. of road; to N., wide spread shrubs in sand - coper, "zapote", "mule ear", "green lardaceous", and mesquite.

We set traps. Saw many lizard tracks + fox tracks. Nr. Piura, Dpto. Piura, Peru

17 July 1967. My 35 traps held 2 ^{H. gerbillus} pale mice (3060, 3061), both on 4' sand hill covered with short "mule ear" shrub. Hamilton also caught one. I caught a Bas-

silla + Coniostomum in snap traps. Presumably we are at N. extension of

definitive Deschima desert. We drove on to Piura, a dirtier less developed town than Chiclayo. This in cotton, banana, + cultivated green

region. Then we drove on toward Sechura, which lay at edge of

desert and was small poor odd town, apparently without public

water system. ^(only water truck, horse drawn) On for about 30 km. ^{to SSE} and camped on rather hard desert with small dunes covered with "mule ear" shrub. I set 25

traps on these hills.

To Bayovar, Dpto. Piura, Peru.

18 July 1967. I caught one mouse. ^(H. gerbillus) We drove on a few km. (36 fr. Piura)

to head of Cataratas de Virilla, where we saw hundreds of gulls, cormorants, shore birds, and a few dozen flamingos. Hamilton made bird

list. about 1/2 km. toward sea was old turtle camp, with bones + pieces

shell green ^{Chelonia} turtles, all perhaps years old. Several lizards seen and taken by Huey. Ground covered with fox and shunk tracks in ^{Salicornia} Salicornia

and similar succulents by water. Many Uca + other crabs, + pecten shells. Area seemed good for study. We drove on to Bayovar, about

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Peru

Dot. Piura, Peru

18 July 1967

1 Nr. Bayovar, SW of Sechura,
phosphate

60 km. from Piura. Peaceful there with only half dozen men about, or mine not operating and waiting for Kaiser representation to come. The men very cordial & offered water, quarters, bath, washing machine, etc. at most there had been about 150 men there. The "mine" was at the "depression," well to the S. Many pelicans, guanays, terns, other birds on beaches & flying. Small surf & sandy or rocky beaches, clear water. About 20 fishing boats out in the bay. We saw porpoises ("bafios") rolling offshore. We drove on to W. about 8 km. to near Puerto Aguija and camped. Many fox tracks as before. Beach littered with bird skeletons. We set traps in rocky quebradas where only occasional "mule ears" shrub.

19 July 1967. My traps (35) held 1 small mouse, & Hamilton had a Rhynch-
clawii.

Atis, apparently free fed on bird carcasses and lizards. Last night boys took several geckos with light. We saw small flock of Passer domesticus at Bayovar; M. Kapsche ^{had} said she thought last reported only north to Trujillo. Worked on specimens until 0930, then drove to Bayovar. En route saw two condors, both of which allowed approach on foot to about 50 yds. (downhill from them). The Bayovar people loaned us a Land Cruiser and driver & we drove 48 km. to Reventazon near S. tip of Cerro Illescos. En route passed through the depression, 20 meters below sea level and without vegetation - but with fox tracks.

Driver said could drive to Morrope with 4-wheel drive car, & we saw trees & buildings in that direction. At Reventazon stayed at ruins of old French sulphur mine. Sandy with ^{hummocks} bearing mule ears, coper, mesquite. Many fox tracks. We set traps as usual, tho bird hunting poor. Above about 300' the Cerro shrouded in fog, the clear in the northern half during our stay. A lone goat herder lives 3 km. to W. - 35 years here, they say. Wind 5-10 mph fr. S or SE, & overcast all day at S. area.

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Perú

19 July 1967

Reventazón, Dpto. Piura, Perú

I ran trap line (40 traps) about 1 a.m. + took ^{H. gerbillus} 8 pole mice on hummocks under bushes in sandy ground. Drizzly later, + at 8 a.m. took 4 more mice from traps. In all, 12, from 7 to 21 gms. Fox apparently pulled out one. No ant damage. None taken at man's burrows (lizards, birds, or fox diggings). Last eve saw night hawks flying near mine ruins. Also 2-3 turkey vultures perched there much of day - nest in mine? Yesterday Huey shot a *Coriastur*, + we saw *Bonitta*. To W, Hamilton saw *Myiocephalus* + sev'l other spp. in large mangrove near goat herder's shack. So Huey took a few geckos last night. Morning overcast at about 300' and 10 mph wind from SE. About 1 a.m. I saw, ^{underground} bat in storage shelter 300 yds NW of mine, but he escaped - myotis? Hung from metal piece near ceiling. Opening about 2' x 3' to 8 x 20 x 7' rock chamber. Also The goat herder came and talked with us. He said coral snakes common (Huey found one), that there was a larger brown snake, that many pelicans were sick and dying, that there were no "perdices" here, that water in Chorillo quebrada was about 2 1/2 hrs. walk from his place (1/2 hr. to ocean), that August colder and rainier than July, but October to May was warm and usually clear. An imm. brown pelican landed near us, walked to where we were shimmering, and one by one ate the discarded mouse bodies - as well as the skin which B Hamilton had just removed from a mouse. Driver returned about 2 p.m. and took us back to Bayovar. First 10 km. on plantless flat, apparently sometimes under salt water. Then gentle rolling with occasional mesquite and (1/2 km.) down through rock strata to the depression where essentially no vegetation or fox tracks, but some dunes and médanos. 19 km., 1 m. mounds w. low plants, and some hummocks w. ^(21 kg.) shrubs, up to rim rock and then larger hummocks w. shrubs, especially "mules ear" (= zapate) on windward

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20 July 1967

Perú
Nr. Cerro Illescas, Dpto. Piura,

side (6/10) and sand to leeward. 27 km., hummock w. shrubs and
occas. small dunes. 33 km., rocks in strata and larger mesquite;
(+2)
and down we saw 3 ⁽⁺²⁾ scolopends walking on desolate flat. Spent 1/2 hr.

searching for Cueva de Las Lircas, where said to be many bats.
(Pta. Tric Trac nr.)

Then to Bayovar, where stayed in cabins & had good meal with the
small staff (3 men). Set no traps. Cold & dark here today w. 15 kt. wind

21 July 1967. Friday. Reorganized gear. Hamilton shot a *Podiceps*, &
some of them seemed to be counting. Clusters of 100+ red crabs on sand

on beach. Net caught some grasshoppers. Saw doves, mockingbirds, mart-
ens, gloritos, passer d., turkey & black vultures. We drove 13 km. to

water well at foot rocky quebrada & set traps there. Returned to
Bayovar, and I set 25 traps in shrubs in sand about 2 km. away,

where many goat tracks, caper bushes, & small mesquite. At water area set
25 under rock ledges where no plants but many caper (?) seeds. Overcast

and windy & cold all day, occasionally brightening. But clear by 8 p.m.
and full moon.

1967.
22 July 1967. Overcast morning. Traps in mesquite & caper bushes
(25)
held 1 mouse (10 gm. ♂, t. 4, imm., discarded; the "pale mouse"), but

a few traps sprung & fox tracks alongside. Traps along rim of
well area held 0, but Mr. Collum got a fine *Phyllotis darwini* in lower

rocks, nothing near bushes in bottom of draw. About 4 km SE
of Bayovar, caught 1 imm. ♂ fox & shot hummingbird & coerebird (?).

Also found a coral snake, which Huey collected, about 10 a.m. Much warm-
er today and brighter sky. Left 25 traps out in brush on sand & caught

3 *Ameiva* during the day (oat bait). Boys set up net same area and took
several *Crius* grasshoppers. In afternoon I saw fishermen bringing in

Chelonia mydas
green turtles a few at a time on small log rafts. About 24 in all

Journal

22 July 1967. Sat.Nr. Bayovar, Depto. Piura, Peru.

were brought in and piled in truck. Caught by set & throw nets. Some must have weighed over 100 lbs. I offered to buy ^{buy} one, & they said they were worth about 20 soles ^(80¢) in Piura. Then they gave me a smallish one, and I took most of the meat for the kitchen. As I cleaned it, several black vultures came and stood 50-100 ft. away, & when I left carcass for a minute, one went to it. I checked traps late afternoon & had caught 3 large Amaiva. Checked ^{again} again 9 p.m., nothing - but Hamilton had 4 of the ^{H. gerbillus} pole mice by then, in long trap line w. many set by 3" holes in sandy ground. Saw 2 bats in evening. Vultures roosted in 15' mesquite trees & flew fairly well in moonlight when disturbed. Clear early night w. moonrise about 7 p.m.

23 July 1967. Nothing in my 25 traps (second night out). 100± cormorants roosted on remains old iron pier at Bayovar. About 10 a.m. saw 4 condors circling about 1 km. S. of B. One landed near a group of Cathartes + Coragyps on ground at ^{carcass of} ~~anywhere~~ a small burro. All flushed as car neared to 70 yds. Black v. saw returned, & later some turkey vultures, but apparently not condors for rest of day. Carcass opened only at anus & shoulder; I set 2 steel traps by it in evening. Also set 40 snap traps in rocks near scattered bushes about 2 km. SW of Bayovar. In evening about 60 Podiceps ^{major} swam 50-200 yds. off ^{beach} ~~shore~~ in a loose group. Checked traps 9 p.m.; no catch. Shot a fox.

24 July 1967. No catch in traps. In afternoon drove to Estuario de Varrillo Varrillo, observed & collected birds. At ocean edge, many gulls, pelicans, & a few Oceanites (we collected 3) and shearwaters (we collected one). On estuary mudflats many ^{H. ex} flamingos, egrets, willets, sandpipers, and others (see Hamil-

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Journal

24 July 1967. Mon.

Nr. Bayovar, Dpto. Piura, Peru.

ton water). I shot an oystercatcher from flock. Saw several Nemurus. Geositta even on sand of ocean shore. Fishermen brought in small ^{sharks} shark, "lenguado" (halibut-like), mackerel-like small fish. Many thick pectens on beach. Parachife village of mud, sticks, + straw wattle - temporary and poor. Clearest day yet, but fog to 5. + 20 kt. wind in afternoon. Set no traps + no night hunting or collecting.

25 July 1967. In afternoon we drove 24 km. on road toward Nisol Mine (too much sand beyond), set traps, + camped in flat "coquino" desert where many barcanes and sand hummocks to 5 m. high half covered (on windward side) by "mule ear" bush. Some mesquite, much of it half dead (from sand drowning). Saw geositta, hummingbird, coerebird, + a plover (flying). Many fox tracks. No lizards seen. I set 40 traps on the "mule ear" dunes + checked them about midnight (2 mice). Cold, windy, overcast; wind dying somewhat at night.

26 July 1967. They had 3 mice in traps. Cold + overcast continued. We returned to Bayovar. Boys collected a quail + 2 cormorants, while I set 33 traps in rocks near bushes at edge wash about 2 km. S.W. of Bayovar. Clear there in afternoon.

Nr. Bayovar, Dpto. Piura

27 July 1967. Traps held 10 gm. pale mouse; discarded. Departed 11 a.m. + drove to San Ramon potato area. Little vegetation, barcanes, + salt ponds, but geositta present + a sandpiper in ponds. Then to Sachem, where ^{greener} greener area started (mesquite, cotton), + we collected a few birds including small parrot. Then on to Piura for supplies, + drove on toward Sullana in desert. Camped about 8 km. W. of Piura near small sandhills w. "mule ear" shrubs and some mesquite + copier.

Piura → Sullana, Dpto. Piura, Peru.

28 July 1967. Peruvian Independence Day. Traps held 4 pale mice, somewhat mouse eaten. Many fox tracks + I saw fox eyeskin in early (3 a.m.) morning.

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Journal

28 July 1967

Nr. Talara, Dpto. Piura, Peru.

We drove on to Talara, a brick town built by Int. Petroleum Co. Windy & sandy area, quite barren, with oil refining by seashore. After some inquiries met Mr R.S. Conly, in charge of refinery. He had been here 11 yrs. Now only 42 Americans here. Conly had some interest in local birds and told of some local spots in quebradas. He took us to one in Quebrada Honda, about 25 km. from Talara, and we camped there in 20 ft. mesquite trees at edge of a dry wash. Some soft sandstone cliffs at edge wash. Much better by goats & donkeys, and many fox tracks everywhere. Good variety of birds. I set 35 traps near edge wash near rocks & mesquite.

We saw a few bats but set up no nets. Fondo, Q. Honda, Dpto. Piura, Peru

29 July 1967. Traps held 9, many being sprung or pulled out by foxes. Saw strings or logs chewed in two (by goats? foxes?). Bird collecting good and we took parrots, flycatchers, gnatcatchers, wood creepers, woodpeckers, & others. Big teal and a Tropidurus present. In evening Ray found large geckos on tree trunks. Set up bird nets, which took a few birds. In evening saw small bat (Myotis?) flying low among mesquite, & took Desmodus and 2 other species (Phyllostomids) in nets. Less wind today. Fred McCollum collected a small owl.

30 July 1967. Put up bats & birds, then went to Talara to clean up and for repairs and supplies. Sunday. We talked with Mr. Conly and son (a radio ham) and stayed at the Punta Arenas housing settlement, which was like U.S. Conly showed me another local area in Paríñas quebrada, and area of sea caves near Malaca point.

31 July 1967. Shopped, & to Paríñas (m. Hacienda) where we camped among mesquite trees up to 30' tall, crisscrossed in many parts. Fair variety of birds as at Fondo. We stayed until August 3 morning, when we moved up Quebrada Paríñas 12 km. to area of a

Journal

August 1-5, 1967.

Nr. Talara, Dept. Piura, Peru.

well at Monte Bajo Grande, a dried site. Huey and Hamill on had visited this Aug. 2, guided by local man, to see a bat cave, and had caught one, of 12⁺ bats seen. I visited the site on August 3. It lay in bottom of draw among mud hills, nearly barren, where a rock stratum ended and edge had faulted, allowing block to close one side. Bats ^{were} ~~were~~ visible by daylight about 12' in and 6' above ground, all (I saw abo 6-8) in one hanging group. I netted 2 + later caught 2 more (so 5 taken of original gp.). Alarmed bats flew out of cave, + some into 30' long recess about 1 1/2' high in back of cave. Thinking more birds possibly present, I set net across canyon a dozen yds. downstream. Bats emerged about 6:30 p.m., but flew up + over ridge rather than down canyon (none got in net overnight). These bats very long-nosed (rather feline? - fed on the red-flowered epiphyte?). This plant a favorite of hummingbirds and some other small birds. Grows near periphery of foliage in clumps up to several feet across. ^{End of Aug 3 we} set out 4 nets and took some Desmodus. Too many goats + fies for trapping. At night in denser area large mequites (in big coral) saw occasional Cypselurus (3123 CBK) + heard occasional owl. One early morning (Aug. 4) I saw eyeshine up tree and shot a rat (3122 CBK). We saw many bats but caught few in nets. At night large bat (Desmodus?) sometimes circled around walking man + seemed to respond to squeaks. The boys got some tree squirrels in thicker vegetation. Almost no birds in reproductive condition, + no nesting evidence. Rain apparently rare + irregular. Many white-winged doves roosted in mesquites + drank at water trough near well (brushed drawn). On 5 August we departed about noon and drove back to Talara, where visited with Conly and

bats =
Tomopos?

Journal

6 August 1967

Talara → ^{Peru:} Mancora, Dpto. Piurathen camped on road north. hit no traps. Nr. Mancora

7 August 1967. We drove on to Mancora. No vegetated gulches apparent between P. Honda & there. Fishing town; 3 100±' trawlers + 30± smaller. Petrels, shearwaters flying near shore. Usual sick + dead pelicans on beach. We were told boat went out about 7 a.m. or earlier + returned about 3 p.m. Just N. of Mancora drove up P. Barrancas about 10 km. Good stands mesquite + coastal birds including parrots. Furnarius seemed especially common, walking in dust under mesquites. Big teiid lizards. In coral where mesquite especially tall, perhaps 60'; Huey shot a large woodpecker. Later we camped there, about 1 km. beyond pump station. Heard owls in evening and I shot 2 (no eyes seen). Also heard Burhinus, & shot one confused by light. (Locals know as "guerequeque"; billclerk-like calls at night). Set 2-3 bat nets + caught mostly Desmodus, the saw seal birds. We stayed night of 8 August too, then drove back toward Talara. (A Cueva de la Leon at edge of ^{town} Mancora proved to have no bats evident.) At Pto. Malaca, a few km. N. of Talara, we entered deep cave in sandstone cliff where ^{sea} water sometimes enters + saw several Desmodus in deep recesses. Took none, but stopped in Talara and departed late afternoon. Camped near S. edge of Cerro Amotape, turning off to N. on sideroad entering about 2 km. E. of gas station, which is a few km. E. of the control "garita". Set a ⁽²⁰⁾ few traps along wash where rocks + scattered shrubs, all very dry. ^(including mesquite, gazate) ^(est. 1000 ft.) ^{S. ft. Co. Amotape}

8 August 1967. Caught 1 imm. Phyllotis in traps. Saw doves, sparrowtails, but few birds present. Huey caught some geckos last evening. We drove on N. on poor road to foot steeper hills + talked with man who had lived there since 1932. He said hills all day, + few animals, + that road

Journal

9 August 1967

Hills to N. of Anotape, ^{Peru} Pto. Piura,

went on E. to Los Baños. Saw reedwren, vermilion flycatcher, small parrot near house. (Bob ^{Hamilton} shot a *Copreimulga* near our campsite). We continued E. on barely passable road about 6 km. (15 from Panamerican Highway), where we hit better road going N. Some *Tillandsia* soon after leaving bend in road. N. of new road the hills were covered w. granite boulders mixed with sparse cactus & brush. We camped in this area ^{the 3} & boys set snap traps [no catch]. Some birds collected including ant bird, & saw wood creepers, sparrows, vermilion flycatcher, oriole, hummingbirds. *Tillandsia* growing on cactus. A purple flowered stalk on some tree bromeliad. Granite boulders reddish and exfoliating, as in *Xantusia henschawi* areas of Borego Desert, Calif. *Buteo* (*polyzona*?) occasional, & a sparrow hawk. Common large (20') tree, mainly leafless, has pinnate compound leaf, lfts. serrate about 2' long, & cut bark exudes milk (palo santo?). No night animals seen except foxes, in evening.

10 August 1967. The 3 boys picked up traps and then pried off granite slope slabs looking for geckos. ^(*Phyllodactylus*?) they found about 20 in 2-3 hours, and also 2 bats at ^{each of} 2 sites ^{Cat. nos.} (3145 - 3148, Csk). We tried to drive on E., but lost road after 3 km. so returned to good dirt road down wash 14 km (about ^{brg.} 170°) to highway, & on 11 km. to Tamarindo. Then to Sullana for supplies, and drove on 67 km. NE to Los Llanos, near a dam (proved to be earth dam 6 km. from town, lake drawn down in rocky basin, w. few birds). Along Chira River much greenery, and black carriguer, caracaras, doves, oriole, saffron finches, & other birds. Country gradually more vegetated toward Los Llanos but still ^{mostly} ~~leaves~~ very dry w. dead-moss shrubs and trees to 30'. Camped 5 km. beyond Los Llanos. Many dry coarse herbs about 1½-2' high indicated earlier showers. Heard owl at night. I set 20 traps near wash in shrubs, rocks, and along stick fences. Saw almost no bats.

Journal

11 August 1967

Nr. Las Lomas, Dpto. Piura, Peru.

Collected birds, which were about same as at Q. Parícut, with addition of big black & white woodpecker and the blue-black-white magpie. Many mockingbirds. Huey drove to dam & collected frogs. Big laid tracks near camp area. I set 15 traps near rocks, bushes, and stick fences.

12 August 1967. No catch in traps. We drove to Sullana, collecting 2 yellow finches by road (3157, 3158 CCK), 07 w. large testis (due irrigation?). Many gallinules & a few grebes in river pond nr. San Sullana. Drove on to Piura for supplies & visit to office of Minera Bayovar. Then drove ^{E.} on Pan American highway. Sandy desert w. shrubs about 10 km. E., but mostly large yopote (mesquite cut out?) at 15 km. Drove on to area of Lambayeque border, and at road crest ^(Abra de Naupe) of red rocky hill took side road about 3 km. to a radio relay tower w. fine view of area to S. and W. Hazy, & soon foggy at our level. We set traps. I put 10 in rocks, cactus, & shrubs near crest hills. A fine grained sedimentary rock w. lines of calcite (?). Little or no fresh signs (except of foxes), but many holes. Tillandsia & Lichenon trees and Craus. A t'opuntia-like cactus also present. Mostly leafless bushes 6-10', w. occasional yopote or other evergreen. No recent signs goats. Grass (dead) to 1' high on some slopes. Pictuque hill w. fog vegetation. Abra Naupe, border Dpto. Piura

13 August 1967. Fog at our level (1500'?). I caught 1, Phyllotis and ^{he} Hamilton another. ^{he} latter saw a coral snake, which escaped. Flocks of 50 ± finches flew over. Saw 1-2 ^{Vultur} vultures soaring over hill on ^{several} occasions, as if part of flyway (nest on E. side?). Hamilton found a coral snake on rocky slope (escaped). We departed about noon and drove toward Chiclayo. (Our side road ^{was} nr. km. 933, about 8 km. N. of Naupe (= Abra de Naupe).) A few km. S. of Matupe we stopped by a granite boulder hill (Co. de la Vieja, probably) and picked off epiphytism, looking

Journal

13 August 1967.

Peru.
Mr. Motupe, Dpto. Lambayeque,

for gelhos. We caught 3 and Hamilton said a few more escaped. The rocks reddish, + associated shrubs, cactus, + small trees about same as at Amatope area. Many fox tracks (I saw one 30 yds. distant in day), and entire hill much beaten by ^{goats}. We drove on and took road a few km. N. of Lambayeque toward Motupe, + camped near former site but nearer corn + irrigation. McCallum set traps (took 2 Peromyscus). Many doves + other birds in green vegetation. Overcast, cold, windy.

14 August 1967. We drove in to Chiclayo for supplies and mail.

Hamilton took a ^{leid} ~~shank~~ on sidewalk by brick wall at edge of town, and later we found Amphibaena, typhlops, + gelhos under rocks + adobe bricks in vacant lot opposite VW service garage. We drove a few miles N. and camped.

15 August 1967. Drove on N. to near Olmos, ^{E. of Olmos} ~~then~~ ^(Erythrina) eastward toward Jaen.

Stopped occasionally to look or to collect. A red flowered tree, with some Tillandsia common at some sites. Olmos River was a small stream, soon dry. Some cactus in trees, + soon saw Ficus and other tropical types. Patches of green forest in some canyons, the most hills dry shrubs and leafless trees. Camped 34 km. out on road at +300 ft. (altimeter), near a concrete bridge over small stream. Set up nets. Collected birds and bats. I set 25 snap traps near stream (no catch). Patch of greener trees in small canyon near camp. Some goats nearby, but comparatively little livestock trouble. Slight drizzle in afternoon and night.

16 August 1967. Put up specimens + hunted. Snap traps took nothing.

Cactus wrens, furnarius, flycatchers, formicariids, tanagers, and birds we already had from other localities. Set out + nets for bats and took a few during night. My net, near bridge across small stream, took only 3 bats. Stayed overnight; no traps.

17 August 1967. Departed early afternoon and drove on uphill,

Abra Porculla 2174m.

Marañon bridge km. 207

+10 km jet (14 to Bagua)

Heda. Morerilla (nr. Bagua Grande) - Americas Zhini (UCLA)

8/23 Bagua Gr. - 19 km from camp.

Pbc. Magunchole - good canyon to S. - 36 km. from BG.

camp - 14 km. beyond, 2500 ft. (odm. 70137)

8/23 camp 20 S 30 E of Bagua (46 by rd. fr. BG)
Ucubamba R.

8/24 camp Tingo Km 280 elev. 910. stream trib. to Utcob.

8/23 Heda. ~~nr~~ Morerilla, nr. Bagua Grande

Aptdo. B, Chiclayo.

Sr. Americo ^hZini (boss)

(control murciélagos)

Journal

17 August 1967.

Porculla Pass + down to E.

, Peru

stopping twice to collect before reaching Alto Porculla - altimeter read 6700 at summit, where argon said 2144 m. Just over summit a square mile or so of puna grassland, but canyon descending to E. was rocky, dry, cactusing. (Our camp of last night was 16 km. before summit on road). Descended road through dry country with little life until reaching pueblo of Hualapampa, where much green mesquite in a broad wash. We camped about 2 km. from Hualapampa, at elev. about 4300 ft. Near camp were 30' cliffs full of holes + clefts. Holes contained hundreds of wasp nests, + large wasps were at every tree. Also one cleft contained Desmodus. I shot 3 in evening + saw 50+ in the cave, 20' in from entrance. Hamilton put up net + took a bat (prepared by CBK) and a Desmodus (released).

18 August 1967.

I shot an Aratinga, which had perched with another at cliff hole (but testis not large). There noisy at times. Possibly some birds feed on the wasps, which are numerous on cliff and trunks of some trees. We drove on down dry wash (occasional water) to edge of Rio Huancabamba, where we saw a cave entrance 100 yds. up a rocky slope. Ascended to cave and found 8+ small bats, which hung in low-roofed (+ high too) dark rock chambers of tunnel about 10 yds. deep. ^{CBK nos 3178-3179.} Apparently Thomomys ferrugineus-id bats. Crossed bridge at El Tambo, in dry ^{rocky} river valley. Then drove along river through 2 small towns, by a new steel bridge, and to El Arenal. Here a flat dry river, with rocky brushy slopes to NE and much mesquite on flat. Set up bird/bat nets. Nighthawks flying in evening. Flocks of small doves roosted in mesquite. Local

8/25 Lv. Tingo -

11 Km. to bridge

Morgan's flu

T. + 14 to Pte. Aznac.

Control sta.

T. + 16 Km stores + Gasol. - toward Pomac.

Then + 15 to snake DOR 6250'.

Lv. Pomac. - stores + 33, going up to 6500' Lake.

Journal

19 August
18 September 1967

El Arco, Dpto. Cajamarca, Peru

Boys found for us a green "camaleón" in a mesquite tree (Huey colap). We stayed on until morning of -

20 August
20 September 1967. Took down nets and started on toward Rio Marañon. Stopped in area eastern, rocky, and spiny trees to collect green jays and big ants. Then on and camped by stream entering Rio Chamaya, where I set up a few traps and boys put up bat net. Several mice caught in bushes in this rather humid area in evening (CPK 3190 - 3192). ~~Bo~~

21 August 1967. Drove on downstream to bridge over Rio Marañon at point where country dry w. much mesquite in near river. Bridge about km. 207 (from Olmos). Drove on to low point in road, near clear (living?) stream through mod.-wooded area, near tree cactus zone. Larger trees & denser vegetation than nearby. Camped and set up nets. Heard caprimulgids and owls calling in evening, and shot some at night. Fair variety of birds and bats, so we stayed until August 23. One afternoon a group of police came & poked around, but caused no trouble.

23 August 1967. Drove to Bagua Grande on Rio Utcubamba, 19 km. from camp. Shortly before town stopped at Hda. Morella, a huge cattle operation owned by Americo Ghini (trained at UCLA). He was having much trouble with infection of cattle wounds caused by vampires. This would be good base for work in the region. Cattle are shipped to Lima by truck for finishing off. Continued on 46 km. beyond Bagua and camped on an abandoned sawmill site near river. Set up one bat net.

28¹
8/28

To P. lake - 6400'

P. - km. 336 post

+ 38 km. to Utcubambo bridge

Roma br. → Bagua Gor, 62 km.

B. G. → Marañon R., 32 km.

Marañon → Chavaya, 16 km.

" → Ptc. Chunchuca, 35 km.

8/30²⁴

eve. Set 17 (caught 1 Phyl.)

Glossoph. bats, Desmod., + 2 other spp.

8/30
31

Lr. Hualapampa 0930

Porculla Pass 2144 m. (altim. 6200' at 29.38)
Zonotri 6500' at 29.71
Turdus

(Camp^{ed} at Co. Vicja, S. of Motupe.)

Coll. lizards - 3 km. W. on road

Summit → bridge 15 km. on road.

→ former camp 16 km.

→ sharp curve 20 km.

→ snake + lizard site 28 km. (2500')

→ iron bridge 32 km.

→ Olmos jct. 49 km.

9/1

To Chiclayo

camped nr Motupe. No traps. Wind, overcast

9/2

~~Xr Motupe overcast~~

Made live traps. 1 set B.

9/3

caught 2 live P. gerbillus, H. & McC left. Sund. Set 5p. + 10 snops.

9/4

caught 1 live, 3 dead P.g. Ham. - O.

Dep. - Chiclayo. Requre, camped

set 13 live. Ham. live + snap.

9/5

No P.g. H. (took live → Alk.). Dep.

Journal

August
24 September 1967

Tringo, Dpto. Amazonas, Peru.

Drove on a short distance to patch of trees and shrubs on a
clear stream near a ^{+ papaya} cocoa ranch, at place called Tringo. Fair
(Km. 288)
bird hunting. Set up bat nets. Saw oropendolas, green
jays, blue tanagers, big black & white woodpeckers. A local
man said deer (Hippocamelus) in grassland up a trail to
S. - he had one antler. Some coffee plantings in tributary valley.
Local people said "patos" (forest ducks?) come up canyon from main
river. This is cut over rain cloud forest zone. To Pomacocha ^{6500 ft.}

August
25 September 1967. Drove up canyon. River rushing white
in the rocky gorge. We saw one Merganetta perched on rock
in rushing stream. From camp, 11 km. to a bridge, and
a few km. to control station at Aguas. Then some stores
where road turned E. toward Pomahuasa. Road ascended
through increasing patches of cloud forest. About 33 km. from
the store reached town and lake of Pomacocha, about 6500 ft.
elev. Little development of roads or docks on lake, which
was perhaps 2 miles across & fringed with trees. A clean
lake, bordered with rolling hills bearing farms and patches
of forest. We stopped at town and drove on, on good road,
for several miles to flat where there had been a sawmill, as
evidenced by pile lumber scraps, concrete foundation. This
was area of active logging, so patches of logged land
and many wide bulldozed jungle trails. Wet cloud forest.
We set up bird & bat nets, hunted birds.

26 - 28 August 1967. Collected birds, bats. Set few traps. On
forest trails heard tinamous, chachalacas. Saw no monkeys
or other mammals (above rat - but size), the Hamilton shot a coati

Aug. 26, evening

Discarded bats.

Desmodus ♀ 36 gms., ut. imm.

♂ 32 gms., t. 4

♂ 32 gms., t. 5

Phyllostomids - 1 ♀ each of 2 spp.

Aug. 29 eve -

discarded bats:

Desmodus ♂ 37 gms., t. 6

♀ 52 gms.; 1 emb. 42 mm C-R

Artibeus (like 3236) ♂ 34 gms., t. 6

Carollia ? (tail 1/2 length membrane) ♂ t. 5, 15 gms.

El Aranal -

8 km. downstream from steel bridge on Huancabamba R.

El Tambo

Km 78 on Olmos road.

Hualapampa

10 km. toward Olmos from El Tambo.

Journal

Dpto. Amazonas, Peru

26-28 August 1967

5 Km N 5 Km E of Pomacochas,

and saw squirrel (?) on ground. Early mornings heard *Nyctibene* (?) calling stringy "wooooo", about 1 octave range in 2-3 sec. Also heard owls, but at night found only *caprimulgids*, & these on open ground. Saw occasional green toucan (Hamilton collected one). I drove 10 ± km. E., past small sawmill, until I saw open valley beyond (no forest) with roadhouse settlement. Little agricultural use of this area; few local crops. We collected 3 specimens of a rufous crested catanga (*amplius*?), which perched in open near treetops in opened forest. Heard *chachalacas* in humid forest. Locals said "pavo de monte" present. Woodcutter common.

29 August 1967. We drove up to foot of Lake Pomacochas, about 15 km. by road and 600' above level of our camp. Photographed lake. Few waterbirds seen. Road walled pasture and forest patches in surrounding hills. Town quiet, undeveloped, rather primitive. Drove back toward Bagua. From Pomacochas, about 35 km. to bridge over Uteubamba (at *Ayacu*?), and 100 km. to Bagua Grande. Crossed Rio Marañon, then on about 35 km. up Rio Chamaya to Rio Chunchuca, a clear tributary with new road ^(Pte. Chunchuca to Chontali) alongside. Drove up this a few km., camped in dry-looking broadleaf forest, and set out bat net - took *Artibeus*, ^{*Desmodus*} under oak-like canopy. (46 km. from camp)

30 August 1967. Some rain night. Drove back thru Pucara, ^(24 km. fr. Pucara) and El Araval, ^(27 km. from Pucara) to El Tambo, then to our former camp at Hualapampa, 4000[±] ft. Set up bat nets and made good catch of at least 4 species. I set 17 snap traps near mesquite trees and rocks on dry slope.

Koford
1967

25

Journal

31 August 1967

Lambayeque,
To nr Motupe, Dept. Perù

Caught 10± bats during night in 2 nets, & released several Desmodus.
Put up all bats (all of us), under date 30 Aug. Took 1 phyllotis in 17 snap
traps set on N. side wash, near the wasp cliffs. (Mc. Callum, in other trap
line, took 0). Pleasant weather. Departed 0930 and drove up to Poculla
Pass, 2144m, the continental divide. Here a patch of altiplano grass on
E side to No road, "iche" in tufts where protected from livestock (mainly
cattle). A few streambeds with bushes, small trees, & water (tadpoles +
small frogs) extended NW thru the grassland, & many birds here - 2 kinds
doves, big turkeys, avis, zosterornis, saffron finches. I collected a
couple. Saw & heard notiventrans, but saw mt. caracara, & Hamilton
saw flashes. In draws saw small lizards (Tropidurus?). Huey
collected purple bellied lizards on W. side pass, about 3 km. by road
beyond summit. Then descended toward Olmos again. From summit
to a concrete bridge, 15 km; to our old camp, 16; to sharp curve h, 20;
to snake, lizard, & bird collecting site (21 Km. E. of Olmos), 28 - this was
where we saw track of large snake across road; big fig tree & fair
assortment birds near stream where rocky, rock walls, bushes, in a
varied habitat; I took a big woodpecker here, & we saw 30+ others
including cranes - 32 km. to iron bridge, & 49 from summit to
Olmos jet. We drove on to Cerro Vieja a few km. S. of Motupe,
& camped, setting no traps. (This was site former geologists collecting in
exfoliating granite boulders.) Much better by goats. Reddish boulders
interspersed with spring shrubs & mesquite. Much fox sign.

1 September 1967. Drove on to Chiclayo for mail & shopping. Then
camped at old site 3 km. E. of Monayo. Windy & overcast. Set no traps.
Sandy & some erosion pavement. Caper shrubs and mesquite trees, with
few zapote. About 1 km. distant to S.W., chacras of squashes, corn.

9/5

Journal

1 September 1967

Nr. Morrope, Dpto. Lankay, quefesi.

also sand hills to 20' high, with brush & many tracks of big cats, foxes, & mice. Mockingbirds, doves, grackles, geococcyx common. No night birds seen or heard (windy past midnight).

2 September 1967. Made live traps (about 25) and looked for mouse

sign. Set live traps for *Peromyscus gerbillus*. I set 8 near camp, mostly along brush fence of ^{live} caper, and dead mesquite brush, where loose sand accumulated. I drove to Morrope, a poor adobe town, for kerosene and met 12⁺ yr. old boy who showed me 3 coral snakes in a bottle (said taken locally). He said there were canebrakes in trees too, & showed me a dark room in abandoned house where there were 10⁺ bats.

I collected 2 ad. + 2 imm. *Carollia* (?) in same room as *Desmodus*.

There hung from bamboo & beam ceiling in 12' x 12' adobe room w. no windows. / Checked ^{my live} traps in evening but no catch by 8:30 p.m.

3 September 1967. ^{Sunday.} My 8 live traps held 2 live *P. gerbillus*. One

(smaller) became torpid in can trap, but revived when warmed. Both ^{room} took milk readily from dropper, lapping fast w. paws holding tips.

These turned over to McCallum for transport to Berkeley. Mc C. and Hamilton took 0 in their 11⁺ live traps each, but H. took 3 *P. gerbillus* in snap traps (2 in same trap, checked last eve). Put up mice and bats. Huey and McCallum departed by colectivo for Chidayo to take bus to Lerma and return to Calif. / I set 5 live traps near camp + 10 snap traps, all along old brush fence in sandy ground. Hamilton tended 20⁺ set in sand hills (probably most natural site), where fair number mouse (+ fox tracks). Mouse

tracks across sand spaces & out from brush atop hills at least 40 ft. Checked my 5 at 10:30 p.m. + had 2 *P.g.* in snaps. ^(+ 10 snaps)

Temp. range 62° - 69° F. at Windy, overcast night, but no rain. 4 1/2 ft. in mesquite tree for 2 days.

Koford
1967

27

Journal

4 September 1967

Peru.
S. of Chiclayo, Dpto. Lambayeque,

None taken in live traps, (save 1 killed in H. trap). One in my snap trap, at same site as 10:30 p.m. Photoed some catch sites. Took up all traps & prepared to leave. About 1300, Hamilton and I departed for Chiclayo. Thence on about 13 km., ~~to~~ to start of Pto. Eten road, where some sand hummocks with caper bushes & rare gapote. Much lizard & some mouse tracks. We camped & set about 25 live traps, hoping to get live *P. gerbillus* & extend range to S. Checked traps 9 p.m. but no catch. Hamilton also set some snap traps. Overcast & windy as usual.

5 September 1967. No catch in live traps save 1 *Alouatta* in Hamilton's, & none in snap traps. Tracks indicated opossum & *Rattus* in damp-er sites near crops & houses. Wind slight in early morning. Took up traps. Yesterday we saw 10[±] red (?) *phalaropes* in pond among reeds near camp. Two turning clockwise circling 2' apart. Area to S. seems to have no shrubs or trees - start of barren zone. Drove on S. and near Km. 726 saw hummocks w. shrubs, suitable for *Phyllotis gerbillus*. Then at about km 719, where road starts E. to Heda. Cayalti (and Yana), clumps of ungrazed gapote with many bird and lizard tracks around them. This was about 3 km. N. of Mocupe. We continued on to 10 km. S. & found side road to W. for camping among sand hummocks topped by gapote bushes. Much lizard signs and fox and mouse tracks. We drove back up to Mocupe and E. to near Heda. Cayalti, a sugar central. Mesquite trees & bushes, w. little grazing apparent. ^(The red-flowered epiphyte here too.) Some black streams and ponds, in which we saw 100⁺ *phalaropes*, yellow legs, sandpipers. And nearby, tropical flycatcher, mockingbird, vermillion flycatcher, blue tanagers, *Furnarius*, saffron

5 Sept. Coral sn. — (escaped, but recaptured)

6 Sept. 7 live Mus. (17 traps)
2 dead (10 tr.)

Depart noon

Dis c. ♂ 11 gms. t. 4

♀ 9 1/2, v. imp, no emb.

♂ 11 g., t. 6

♀ 7 g. imm.

♀ 8 g. imm.

& others

Vuranid-like skull.

(These kept alive until 8/8):

Disc. - mus. ♂ 8 g., t. 4.

♂ 7 g. t. 4

♂ 9 g., t. 5

♂ 12 g., t. 7

+ 3^{or 4} dead or escaped

Lizards - coll. teids, + shoulder-pocket iguanid.

7 Sept. To Trujillo + camped to S. in dunes. No traps.
Wet drizzle.

7 Sept. - To Casma + up to 8500' site. Arr. 1500.

Set 38 traps (incl. 12 live)

Muffs, caprimulgid, tinamous.

odm.
Casma 7928'

Camp 366

8 Sept. - Catch: 18 Phyll. d. & m.

1 sh t eared Phyl. (= Oryz.?)

1 ak. bol.

overcast eve.

2 Marmosa
22 (38 set, 12 live tr. + 6 empty) Min. 48°

9:30-11:30 p.m. 55 traps - 23 caught
incl. 4 Marmosa

6 pm
shot ♂ Nothop.

Journal

5 September 1967

Peru.
Nr. Mocupe, Dpto. Lambayeque,

feather, and other birds. We collected a few. 10+ swamp (?) egrets in pond near Zaña (ruins of old brick and adobe church there). Returned to camp area and set 32 live traps and some (1, 10) snap traps on hammocks. I caught a small coral snake at foot of sand hill. Windy afternoon and evening, with fog to W. 1 Mud furnished nests in trees in Cayalli area. 1 Checked traps about 10 p.m. and found many Mus, but no other species.

6 September 1967. My catch was 7 live Mus (in 17 traps) and 2 dead (in 10 snap traps). Git area appeared like Paralimys habitat, + was neither littered nor grazed. Abundant fruits on zapote, including ground. Some copier bushes. Put up only one Mus; others discarded (7-11 gms.). No Mus apparently breeding now. 1 I found large varanid like lizard skull. Shot a few fast-running ticks - some ran 100' between clumps bushes. Hard to see when not moving. We also collected a few of lizard with small skin pocket in shoulder and tendency toward fringe on toes + eyelids. 1 Departed ^{early} ~~early~~ afternoon, drove to Trujillo for supplies, then on a few miles + camped in sandy zone. Foggy + drizzly at night. 1 Km. N. 12 Km. E. of Pariacoto Dpto. Anca

7 September 1967. Hamilton and I drove on to Casma, then on up ^{Huaras} ~~Huaras~~ road 85 km. to approx. 8500 ft., our former camp in ^{old} area of rock walls and brush. Now drier than before, and few of the red-flowered vine-shrub in bloom, + fewer hummingbirds, but no livestock now. Birds flying over. Tinamou (N. partridge) present in dry open brush areas. F. bush ^{caprimulged} with white wing bars. We both set traps. I set 38, including 12 of the tin-can live traps, up a broad draw by bushes, at foot of old fragments of rock walls with bushes growing on or near them, and across mod. open brush slope (W. aspect, about 20%, large gravel + occasional rocks).

9 Sept. a.m. catch 17 (so 37 in 55 traps)

Saw Patagona g.

Took up part - so 30 left.

Eve catch - 6 only by 10:30. 1/2 moon; clear

10 Sept. a.m. catch - 14, incl. 1 Macurus.

Min. 50° F.

Nr Pariacoto

2 P. magister

1 Oryz.

rest P. darwini

Lv. 3 p.m. - Drove E.

Temps. 48°-81° F

Store + gas 6 km.

Ruablo rd. to Pira

Camp - ^{Nr.} Tinco - rocky canyon - 3 km. beyond. 12000'

Dipper - bl. hummers. Ferns, lichens

Set 35 traps

Min t. 40° F.

11 Sept.

Catch 10 AK.b. + 16 P. darw.

Tinco

Set ³⁸~~40~~ - rocks, bushes, to S. of camp, to 500' above.

12 Sept. catch: 3 AK.b., 7 Phyl.d., 1 P. mag.

Tinco

(Indians took 7 traps.)

T. max. 60° F

Disc. AK.b. ♀ 19 gm. - ut. intact.

♂ 24 g. - t. 6

♂ 18 g. , t. 4

P. dar. ♂ 30 g., t. 3

♀ 19 g., ut. min. } highest level

♂ 14 g. min.

♀ 19 g. min.

♂ 35 g. t. 7

♂ 37 g. t. 9

♂ 26 g. t. 3

Saw

Mt. Caracora

Lv. 3 p.m. - to Callan (121 Km. fr Casma, 16 fr. camp)

Camp 2 Km. W. of summit - small stream; rocks

Cinclodes

Ichu - rocks - cacti

Phlogothys

Vannellus

Set 35 tr. - grass - rocks

stream - hill

Froze night.

Journal

8 September 1967

8500 ft.

Peru:
Nr. Paria coto, Depto. Ancash,Yesterday altimeter broke. Calm night last night; I slept out - min. $+8^{\circ}\text{F}$.My traps held 1 Akodon boliviensis, 1 Oryzomys, 2 Marmosa, and 18Phyllotis darwini ^(?) and magister (?). We hope to find habitat difference

between last two, but no separation by brush-loving and rock-loving is apparent. The brush is on somewhat rocky ground, not in pure stands,

& nearly every trap in brush had mouse or was sprung. Many had

heads eaten in traps, presumably by other mice or Marmosa. / Temp.to 80° in day, so worked to save specimens. Checked traps in afternoon

and removed fur seal (spec.) and lizard. Left (& rebaited) traps, and set

additional to 55 total. Checked traps ^{at} 2130-2330 and removed 23 mice.In addition to those put up, these included: P. magister ♀ imm. 30 gms.;Akodon boliviensis ♂ t. 8 x 4 (104-82-21-16, 27 gms.), & Oryzomys ♀, partlyeaten. (Lost within a few feet of open flat at top slope.) Also many P. darwini (= audium)imm. ♀♀, ad. 213-102-26-21, 35 gms., ut. scars 3R 2L, w. Tunga cyst in

tail; 34 gms. with uterine bulges, 2 R 1L, 5 mm. diam.; and imm. ♀♀

16, 24, 14, 23, 22 gms.; ♂♂, ad. t. 6 x 3, 218-114-25-21, 34 gms., and

imm. 20, 27 (t. 3) gms. Both kinds of Phyllotis taken in same

trap on successive nights, & both in similar habitat 5

yds. apart, so no clear separation between audium andmagister. / In evening I flushed and shot one Nothoprocta on dry brush & grass slope. Overcast evening.

9 September 1967.

8500 ft.
Nr. Paria coto, Depto. Ancash, Peru

By sunrise had 14 mice in traps, so 37 taken in 55 traps.

I took up part of line, leaving 30 out. Saw a Patagonagigas on brush on dry hillside, perhaps attracted by red

flowered vine on shrubs. Checked traps evening and had only

6 animals. Clear w. half moon.

Additional notes -

Phyllotis andium and
" magister

Dpto. Ancash, Peru

8 September 1967.

1 Km. N. 12 Km. E. of Pariaquito,

Described the following:

① P. magister. ♂, 20+ gms. (head eaten), testis 3 mm., stomach contents pale olive green. Tail & hindfoot 96-25. Trapped at base of 4' grass shrub on dry partly-gravelly slope. ② P. m. ♂, 34+ gms., test. 7, no chest buffy spot; ?-121-28-22. Under brush on partly rocky W. slope. Gray belly, red-brown perineum. ③ P. m. ♂ imm.; long hair, reddish ears. ?-87-25-20, 17+ gms. Tops hindfoot brownish, & soles blacker than andium. Faint chest spot. Taken base rock wall (4' high, 10' long) partly overgrown by herbs, including red-flowered vine-shrub.

P. andium = ④ ♂, t. 3, ?-122-26-20, 27+ gms. slight chest buff spot. Base 6" diam. short dead tree in thick green brush. ⑤ ♂, t. 8, ?-126-26-19, 30+ gms. Base 8" diam. small dead tree and bushes on partly gravelly slope. ⑥ ♀, lactating. Uterine scars 2 R 2 L. 30+ gms. No chest spot. Taken under thick half-dead bushes on dry W. slope w. small scattered rocks. ?-117-25-21. Reddish perineal hair. ⑦ ♀, uterus inactive. ?-92-24-17, 16+ gms. at foot rock wall. ⑧ ♂, imm. t. - 3, 14 gms. Under 6' red-flowered vine-bush, near scattered single rocks on slope. ⑨ ♀, ut. inactive, 22 gms. Base rock wall on grazed flat near camp - no bushes close. ⑩ ♂, t. 3, 27 gms., same location; 207-114-27-21. These last 2 surely rock-wall forms.

Concl. Caught both species within 15' at base same rock wall on bushes on same night. And both in same trap near top of bushy slope (same rocks) on successive nights (also Oryzomys & Marmosa here).

Journal

(8500± ft.) Peru

10 September 19671 km N 12 km E Paríacoto, Dpto. Ancash,

Cool night, to 50°F. Morning catch comprised 14 more animals including 1 Marmosa, 2 P. magister, 1 Oryzomys, + rest Phyllotis andinum. Put up specimens and prepared to depart. Temp. range here has been 48°-81°F. Departed 3 p.m. and drove uphill to E., passing small store 6 km. from camp. Climbed to small town by river, where dirt road took off toward Pira (mines). Camped about 5 km. beyond town, near bromeliad-covered cliffs in shady ^{TINCO} canyon bottom. Ferns + thick grass + shrubs near stream - but in many damp sites. Saw dippers in stream. I set 35 traps near the stream and up adjacent bunchgrass slope, none in dry sites.

Tinco, 12000 ft., Dpto. Ancash11 September 1967, Min. temps. 40°F. My traps held 10

Akodon boliviensis (?) and 16 Phyllotis andinum (?). Put up mice. Then ascended dry grassy hill, partly cultivated and with occasional rock walls, toward cliffs and then slider to S. - about 45 min. climb, and 500±' above camp. Took photos. Set 30 snaptraps near bushes, rock walls, rocks.

Tinco, to Callan, Dpto. Ancash

12 September 1967. About 7 of my traps taken by local Indians (10 gone; I got 3 back from them). No mice taken in highest talus slopes (reported to be vicuñas there). Traps held 3 Akodon boliviensis, 7 Phyllotis andinum (?), and 1 P. magister (by rock wall in grass, w. no shrubs near). Saw mountain caracara. Collected Patagona on high slope (rocks + shrubs), + big flycatcher on rock wall in (CHK 3284) grassland. Last night heard many owls (Bubo?) in the

Journal

12 September 1967.

Callan, 13000 ft., Dept. Arequipa

rocky canyon. Departed 1500 and drove up to Callan (16 km. from camp, 121 km. from Casma), where we camped about 1 km. W. of summit near a small clear stream & rock formations.

Some cushion cactus, ichu grass. Saw lapwings, cinclodes. Frogs in stream. I set 30 traps near rocks & grass, near stream and up open slopes. No people or livestock seen this high. Cold night - water froze. Checked traps evening & had a few P. pictus by 9 p.m. ^{Flushed hummingbird from hole in cliff at night.}

13 September 1967. My catch surprised B. Phyllotis

pictus, 5 smaller Phyllotis, 1 Akodon, and an Oryzomys. It was 30°F. in car last night, & 3 of 4 Marmosa held in live traps died. (Even on warmer nights usually cold and slow moving). Saw lapwings & collected one, over green stream area. We put up specimens, then drove over crest and down toward Huaras. Dry & barren in upper lands, but more cultivation and increasing eucalyptus plantings as descended. Huaras, tile-roofs conspicuous, & snow & ice peaks above. Many Americans there - Peru Corps? - and good "queso mantecoso." Rest supplies & drove S. through much inhabited area near Risanta.

Rain in afternoon. Camped, ^{22 km by road beyond Huaras,} about 5 km. before reach-

ing Recuay, in area shrubs, grass, and occasional boulders. I set 10 snap traps near road culvert & bushes ^{20 km S. Huaras, 10000 ± ft.} in evening, and 12 more near shrubs ^{near river flood plain} on slope after rain stopped, about 1 a.m. (14 Sept.)

14
13 September 1967. Total catch was 10 mice, mostly a Phyllotis (or CSK 3291). Drove on the Recuay, where a

13 Sept. catch: 8 Phyl. pict.
 5 " (subl. ?) - smaller
 1 ak. bol.
 1 oryz. ? (long tail)

coll: Bds.
 Philoscelys Vanellus
 No Nothoprocta seen.

Phyl. pict. - wt. ^{gender}
 ♀ 51 g. catalog
 ♂ 49 g. cat.
 ♀ 40 - no emb. or sc.
 discards ♂ 41 t. 10
 ♀ 43 ut 8 mm wide; 2 imp. sites; L + R (1 ca.)
 ♂ 27 t. 5
 ♂ 27 t. 3
 ♀ 27 ut. imm.

disc. - Ak. b. - ♀ 159-63-21-19, 21 gm. - no emb. or sc.

Phyl. subl. ? -
 disc. { ♂ 25 - catalog
 ♂ 17 g - t. 6
 ♀ 14 g - imm.
 ♂ 15 t. 4
 ♂ 14 t. 3

30°F. in car last nite - 3 Marmosa died, 1 survived.

♂ t. 3 17 gms.
 ♀ 19 gms. } ut. inactive;
 ♀ 18 gms. } imm. ?

To Huancas + 22 km. - camp - rain.

set 10 eve, 12 1-2 a.m. [catch 10]

Journal

14 September 1967. Dpt. Ancash, Peru
Rio Santa, 45 km S. Huaros, A
 "fiesta patronal" in progress. Then on up Rio Santa, and soon after crossing river (going E.) ^{near Catac,} passed through rolling dry bunchgrass lands w. occasional rock walls. A herder said perdejes (tinamous) present on slopes, & that many trout of small size in rivers (Lakes like area of Crucero in Dpt. Peru). Camped by rock walls and bunchgrass, in area local Indian called "Rachacoca". Drove a few km. toward peaks to E. and came to 2 lakes, about 200 and 400 yds. long. On smaller were teal, coots, and crested ducks. Teal with 5 \pm juvs. (call. ot and juv.). Also some shore birds. Lake called "Tapara" or similar name. Located in rolling grasslands w. rare pastoral habitation. Also Andean gulls (old nest on rocks in lake), grebes, and ibis. Rachacoca is near km 394 (fr. Lima), about 25 km. from Recay by road. I set 25 traps by rock walls in ibis. Local man said tinamous present, but we saw none. Upper Rio Santa, 11000 \pm ' Dpt. Ancash

15 September 1967. My traps held 10 Hesperomys (?), one Abrodon boliviensis (discarded), and a smaller mouse (catag). I hunted ibis and shot a Rathoprostia (apparently R. ornata brasili, known only to juvenis). Local man said vicuña in Cordillera Blanca to E., & that road headed that way from m. a bridge a few km. to N. of our camp. We drove on up Rio Santa thru sparsely inhabited ^{rolling} grasslands, & saw occasional large white goose (Chloephaga). Reached Lake Conococha, 4000 m., 33 km. from last camp, 82 km. from Huaros; sign said 31 to Chiquian, 132 to Patawita. (Our camp had been 15 km. N. of a bridge across Rio Santa). The lake

Journal

12500± ft.

15 September 1967.Lake Conococha, Depto. Ancash

appeared to be shallow, with many exposed muddy areas, but 50± *huallata* (geese), and various ducks + shorebirds. We saw men fishing in outlet stream with long poles. I set 22 traps by boulders and rock walls up a slope w. bunch-grass and some bushes and cushion cactus. Cold night.

16 September 1967.

Catch was 11 mice, all same kind of *Phyllotis* apparently. Ice on water. Flighted duck flocks in morning. Departed for *Patawila* on coast down dry rocky canyon, w. gradually increasing agriculture with decrease in elev. Streams + talus in upper reaches. Corn and cane in lower. Small town, Chusquitambo, 76 km. from lake. Continued on S. to dry backside of *Lomas de Lashay*, in heavy evening fog. Same to camp as July 1.

17 September 1967.

Explored slopes to W., walking to summit where fog swept over crest. ^{shot} Green fables on upper slopes + extending down 500± ft. Apparent *viscachas* droppings on many rocks, and prominent dusting bauls on one slope. Earth dug out 1/2 ft., dusty; and *viscacha* tracks and trails. Set 20²² snap traps and ^{a few} ~~several~~ steel traps for *viscachas*. Hamilton saw 2-3 *viscachas* at foot of talus slide, well below green belt, and set traps there. Few birds seen, but 2 adult *Vultur* skirted cliffs, as if nesting in area. Heard owl calls at night. ^{There were only 10-11 a.m., 3-4 p.m.}

18 September 1967.

My 22 snap traps held 4 mice, *Phyllotis darwini*. Caught no *viscachas*. Foggy again. Took up traps and drove around to Bosque de Lashay. From below first gate, saw ^{green} aspect, and at headquarters fables were 1' deep.

Journal

18 September 1967.To Lima, Peru.

Zonotrichia singing in eucalyptus area. Very much greener & more birds than in early July. Doves and *Pyrocephalus* common. Below station above highway, saw *Thrinornis* in flight displays and on ground, and collected one. Occasional flights shorebirds overhead. *Geocitta* common (RBH catalog). We left in afternoon and drove to Lima. (Rear wheel gears noisy and needing repairs.) Stayed again at Casa Humboldt.

19-25 September 1967. Sorted and packed specimens. ^{Lima; to San Francisco, Calif.} Visited Museo "Javier Prado," where Koeppke's worked. Car repairs delayed for lack replacement parts. Left equipment in garage of Jorge Milberg, and arranged for him to get car and to store it in parking yard on Av. Schell near Av. de la Republica, Miraflores. Departed from airport midnight of 25 Sept. on Braniff airlines for SFO via Miami. On this route we could take 30 kilos each, so specimens accompanied us. Two *Parabuteo* taken by Mc Callum and large live lizards by Huey had arrived previously in California. For all 4 of us, nearly 1000 specimens, of which about ⁶⁰⁰ ~~600~~ were birds and mammals. My own catalog numbers ran from 3037 to 3318 for the trip. Huey took the herpetological specimens to Univ. Texas, Austin, where he will work on identification.

See specimen catalog for additional notes on habitat of specimens and size and sex condition of birds.

20/6/75

C. B. Koford

1968

Catalagay

332 - 333

3811 - 3881

Sierra del Nido
Mexico

Specimen Catalog

Mexico 1968

19 July Arroyo de las Animas, Sierra del Nido, 20 mi. NE Santa Clara, Chih., Mex. 8000'
 skull only sex? Canis lupus. Pickup; trapped June.
 3811

25 July Arroyo del Mesteno, Sierra del Nido, 16 mi. NE Santa Clara, Chih., Mex. 7000'
 skull only sex? Canis latrans Pickup; died July.
 3812

In formal 07 Tadarida brasiliensis. Mist netted nr. cabin.
 3813

27 July " , " , 14 mi. NE Santa Clara, " , " 6500'
 formal Crotalus l. (green, w. black bands)
 3814

Found 10' from stream in grass-oak area.

28 July [Rancho Parapetos], 6 mi. ENE Santa Clara, Chihuahua, Mex. 6200'
 Head only sex? Halioeetus leucocephalus. Dead on fence; died spring.
 3815

10 August Pajarito Canyon, Sierra del Nido, Rancho Providencia, 25 mi. SW Gallego, Chih., Mex. 6000'
 F Crotalus In grass near bushes, 10 m. from stream.
 3816

15 August Canyon las Varas, Sierra del Nido, Rancho Providencia, 26 mi. SW Gallego, Chih., Mex. 6000'
 F Gerrhonotus Kingi - near stream
 3817

F Thamnophis - near stream
 3818

16 August Canyon de la Madera, Sierra del Nido, R. Providencia, 25 mi. SW Gallego, Chih., Mex. 7000'

3819 ♀ Pipistrellus 83-40-7-12

3820 ♀ Myotis 96-45-8-12

{ Mist netted over
 water trough in
 evening.

~~9 Nov. [Rancho Parapetos], 6 mi. ENE Santa Clara, Chihuahua, Mex. 6200'~~
~~skull only - pickup~~
~~3800 3821 ? Ardea herodias~~

~~Shell taken from complete dead bird in bottom grassy draw.~~

~~14 Aug. 30 mi. SW Gallego, Chihuahua, Mexico.~~
~~antenna only~~
~~3801 3822 07 Odocoileus virginianus~~

Specimen Catalog

1968

13 Oct.

5 mi. N. Cerro Campana, Santa Clara Canyon, Chihuahua, Mexico. 5300'

Lampropeltis

3821

Mt. Kingsnake

Lying 1/2 in clump sedge by stream.

14 Oct.

6 mi. NNW Cerro Campana, [Santa Clara Canyon], Chihuahua, Mexico. 5500'

3822

Diadophis

On road near stream

16 Oct.

[Lloron] ^{12 mi.} [20 Km] NE Santa Clara, Arroyo del Alamo, Chihuahua, Mexico. 7300'

3823

Sceloporus

24 Oct.

25 mi. SW Gallego, [Cañon del Nido], Chihuahua, Mexico. 6000'

3824

♀ 5 emb, 3R2L, C-R22. Peromyscus

198-103-19-19, 36 gms. (died in live tr.)

25 Oct.

Base bush in open oak canyon bottom; mod. dry, some boulders. [Los Varas Cañon]

3825

♂ ad., t.-1 Parus wollweberi

10 gms.; no fat.

Small oak in dry canyon bottom; chichadee, junco near [Los Varas Cañon]

3826

♂ juv., t. 1X3. Accipiter striatus

99 gms, sl. fat.

3827

Black lizard, blue belly.

Lampropeltis

3828

Mt. Kingsnake

Lying next to thick clump grass by road. [Higuera C.]

24 Oct.

3829

♂ juv. Sphyrapicus varius

27 Oct.

25 mi. NE Santa Clara, [Head Mostaño Cañon], Chihuahua, Mexico. 8000'

3830

? Sphyrapicus varius

3831

♂ juv.; sk. 1/3 clear Certhia

8 gms, sl. fat.

3836

Gerrhonotus

In grass nr. summit peak.

28 Oct.

3832

♀ ad.; ut. sc. 3R2L. Peromyscus

186-92-21-21, 29 gms.

29 Oct.

20 mi. S. Gallego, Chihuahua, Mexico. 5000'

3833

♀ ad.; o.n.e. Lanius

In mesquite shrub on desert flat.

20 mi. SSW Gallego, Chihuahua, Mexico. 5000' (photo 11/3)

3834

Thamnophis

In grass edge road on plain; dry area.

31 Oct.

22 mi. NNE Santa Clara, [Arroyo del Alamo] Chihuahua, Mexico. 7500'

3835

♀ juv.; sk. 1/3 cl. Cardellina rubrifrons

Oak in canyon bottom.

3836

1 Nov.

(skull 1/3 clear)

3837

♀ juv. Catherpes mexicanus

13 gms.; sl. fat. Boulders; shady canyon.

Specimen Catalog

1968

1 Nov. [Arroyo del Alamo] 20 mi. NE Santa Clara, Chihuahua, Mexico. 7500'✓ 3838 ♂ t. 12x7 Peromyscus 178-95-20-17. Canyon bottom on rocks.✓ 3839 ♀ lact; ^{ut. sc.} 2R2L " 178-91-20-17 " " " "

3 Nov.

✓ 3840 ♂ juv. ^{sk. 1/2 cl.} t. < 1mm. Sitta carolinensis 20 gms.; sl. fat.

5 Nov.

3841 ♀ lact; 4 ut. sc. Peromyscus 184-90-23-20, 23 gms.

7 Nov

18 mi. NE Santa Clara [Cañon del Alamo] ~~7500'~~ Chihuahua, Mexico. 7000'3842 ♀ ^{1400.} ^{3 sc. 4} 3, 3-mm sw. R. Peromyscus 157-67 (broken) - 21-20, 20 gms.

8 Nov.

3843 ♂ juv. sk. 1/2 cl. 20 gms.; sl. fat.

✓ 3844 ♀ juv.; sk 1/10 cl. Myadestes 32 gms.; sl. fat.3845 ♂ juv.; t. 1 Parus wallacensis 10 gms.; sl. fat.(mixup w. 3834?)
dupl. nos. { 3846 ♀ juv. Sphyrapicus varius 50 gms.; sl. fat. Chihuahua, Mexico
10 Nov. 23 mi. NE Santa Clara [Arroyo del Almesteno] 7500' (conifers)3847 ♂ t. 2 Sphyrapicus varius 47 gms.; sl. fat.3848 Gerrhonotus✓ 3849 ♂ t. 1 Cyanocitta stelleri maculophya 106 gms.; sl. fat.M 3850 ♂ t. 1 Pipilo erythro 43 gms.; mod. fat.

11 Nov.

3851 ♀ ut. sc. 3L2R. Peromyscus 183-94-23, 21, 29 gms.

(Rocks & woodpile behind cabin.)

Discard ♀, 22 gms., lact, 3-9 mm empty bulges R ut. brown, rose L. and ♂, 19 gms., t. 6x13.
3 (R, 1, 2) L; 1-R.✓ 3852 ♂ t. 1 Cyanocitta stelleri m. 108 gms.; sl. fat.3853 ♂ t. 1 Pipilo fuscus 48 gms.; sl. fat.✓ 3854 ♂ juv. ^{sk. 1/3 cl.} Spizella 12 gms.; sl. fat.

12 Nov.

✓ 3855 ♂ t. 1 Parus m. 11 gms.; sl. fat.✓ 3856 ♂ t. 1 Sitta c. 19 gms.; sl. fat.✓ 3857 ♀ o.n.e. Sitta c. 17 gms.; sl. fat.✓ 3858 ♂ juv. Sphyrapicus varius 47 gms.; no fat.✓ 3859 ♂ juv. Cyrtonyx 184 gms.; sl. fat.M 3860 ♀ juv. Parus sclateri 10 gms.; sl. fat.

Mileage - up Arroyo del Alamo

Mestizo hdyrs. 0

Rd. about 030°

Dam + 200m. pond 0 + 1.6 mi.

Rd. about 050° to 0 + 2.4 mi.

Red rock on W. 2.5

Rd. goes 110° to 2.9

Then 140° to 3.5

Then 070° + 060° to 4.9 @ water tank

Low - cyl. tank, bright. 5.0

Then about 340°

And more to E. starting 5.6

Summit about 6.7

Specimen Catalog

1968

12 Nov. 23 mi. NE Santa Clara, Arroyo Mesteño, Chihuahua, Mexico. 7500'

3861 ♂ juv. Spizella sl. fat

13 Nov. 8 mi. N. Santa Clara, Chihuahua, Mexico. 6500'

3862 ♂ t. 2 Otocoris 27 gms, sl. fat3863 ♀ one. Sandpiper 38 gms, much fat.

14 Nov.

Edge Santa Clara River where flowing. Open, rocky.

3864 ♂ t. 2 Euphagus cyano. 73 gms.; sl. fat.

Flocks up to 300+ in settlements and near ranch houses.

40 mi. S. Gallego, Chihuahua, Mexico. 5000' (mesquite desert)
ad. 1956. some3865 ♀ ov. 4mm Campylorhynchus 38 gms, little fat.3866 ♂ internal Neotoma 252-105-33-26, 96 gms.

3867

65 mi. WNW C. Chihuahua [Las Tunas ranch, of Don Gilberto Muzquiz]
16 Nov. ~~65 mi. WNW Coahuila~~, Chihuahua, Mexico 7000'skull only
3868 ♂ Urocyan 252-105-33-26, 96 gms.

20 Nov. 35 mi. ESE Santa Clara, Chihuahua, Mexico. 7000' [R. Camarero]

3868 ♀ o.n.e. Dendrocopos 51 gms, sl. fat.

21 Nov.

3869 ♀ juv. one. Cyanocitta 93 gms, no fat.3870 ♂ juv. Pipilo erythro 42 gms, little fat3871 ♂? ad. Parus sclateri 10 gms, some fat

22 Nov.

40 mi. S Gallego, Chihuahua, Mexico. 5000'

ad.
3872 ♀ 1956. ov. 4mm. (mesquite desert)
35 gms, sl. fat3873 ♀ one. Lanius 51 gms, some fat

20

40 mi. SW Gallego, Chihuahua, Mexico. 5000' [Canyon Rancho El Nido]

3874 ♂ ad, t. 1mm Calcaris 22 gms, sl. fat3875 ♂ Toxostoma 87 gms, sl. fat.

Cactus bushes among oak and grass.

23 Nov.

3876 ♀ o.n.e. Parus wellschleri 10 gms, sl. fat

Specimen Catalog

1968

24 Nov.

20 mi. WSW Gallego, Chihuahua, Mexico. 5000'. [Rincón del Alamo]

semen plug

3877

♂ t. 12
x6Dipodomys

250-146-37-13, 50 gms.

Dissected ♂, 39 gms; testes 7x3 mm; fluid. / 77

3878

♀ juv.

Pyrrhuloxia sinuata

36 gms.; sl. fat

3879

♂ t. 7 mm.

Asio otus

240 gms; little fat

Oak savannah, rather open stand; gentle slopes. Daytime.

~~End.~~

9 Nov.

8 mi. N.

~~6 mi. E~~

Santa Clara, Chihuahua, Mexico. 6500'

skull only

3880

?

Ardea herodias(bottom lower Mesterio canyon)
(from complete carcass)

14 Aug.

30

25 mi. SW Gallego [Cañon del Nido], Chihuahua, Mexico. 8000'

antlers only - from carcass.

3881

♂

Odocoileus virginianus

(Dead about 1 week.)

Part carcass, chaparral + pine slope, dead 1 wk. ±

UCD
SH.

1

S.G. Herman
1968

Specimen Catalog
(Steve Herman + Jim Ellis)

(Specimens
at U.C. Davis,
Dept. Zool.)

13 October Santa Clara Canyon, 5 miles W of La Parita,
Chihuahua, Mexico 5400'. near stream.

191 Thamnophis cyrtopsis (J.E. Ellis)
Santa Clara Canyon, 6 miles W of La Parita, Chihuahua, Mexico 5600' (= Km. 92, Panam Hwy.)

discarded
192
193

Rana

Bufo (2) these were thrown away
because they were destroyed by the preservatives.

15 October Arroyo del Alamo, 5 miles N Mestero Ranch Head
quarters, Sierra del Nido, Chihuahua, Mexico 7300'

194 ♀ Junco caniceps (C.B. Koford)

16 October Arroyo del Alamo, 6 miles N Mestero Ranch Head-
quarters, Sierra del Nido, Chihuahua, Mexico 7500'

195 spotted towhee Pipilo erythrophthalmus

Arroyo del Alamo, 7 miles N Mestero Ranch Head
quarters, Sierra del Nido, Chihuahua, Mexico 7400'

196 ♀ Stellar Cyanocitta stelleri macrolopha

Arroyo del Alamo, 5 miles N Mestero Ranch Head
quarters, Sierra del Nido, Chihuahua, Mexico 7300'

197 Sceloporus? (J.E. Ellis)

Arroyo del Alamo, 6 miles N Mestero Ranch Head
quarters, Sierra del Nido, Chihuahua, Mexico 7500'

198 Junco phaenotus (J.E. Ellis)

17 October Arroyo del Alamo, 5 miles N Mestero Ranch Head
quarters, Sierra del Nido, Chihuahua, Mexico 7300'

199 Sceloporus

Plateau above Arroyo del Alamo, 9 miles NNW
Mestero Ranch HQ, Sierra del Nido, Chihuahua,

S.G. Herman
1968

Catalog

2

17 October
continues.

Mexico
200 Nucifraga columbiana ^{coll.} very fat (J.E. Ellis)
Feeding w. group in piñons on ridge.

201 Sceloporus [Arroyo Mesteno]
Mesteno Canyon, 12 miles ENE Santa Clara, Chihuahua,

Mexico 7300'
202 Crotalus montezumae mearnsi (J.E. Ellis)
Mesteno Canyon, 13 miles ENE Santa Clara, Chihuahua,

Mexico 7300'
203 Sceloporus [Arroyo Mesteno]
18 October Mesteno Canyon, 12 miles ENE Santa Clara, Chihuahua,

Mexico 7300'
204 ♂ Carpodacus mexicanus
205 Masticophis Salvadora grahamiae ^{coll.} (J.E. Ellis)
206 Sceloporus (J.E. Ellis)
207 Myiarchus g. guttato 7500' in Madrone

19 October eating berries
[Lloron]
Arroyo del Alamo, 8 miles N Mesteno Ranch Head
quarters, Sierra del Mido, Chihuahua, Mexico 7600'

208 Parus sclateri eidos
Mesteno Ranch, 12 miles NE Santa Clara, Chihuahua,
Mexico 7300' (Lloron)

209 Rana (J.E. Ellis)
Arroyo del Alamo, 5 miles N Mesteno Ranch Head
quarters, Sierra del Mido, Chihuahua, Mexico 7400'

210 Sitta carolinensis umbrosa ^{coll.} (C.B. Koford)
White breasted Nuthatch
20 October As 2 above (Lloron)
211 ♂ juv. Aphelocoma ultramarina arizonae
Mexican Jay 120 gms skull 80% clear; no
fat. (C.B. Koford)

S.G. Herman
1968

Catalog

3

20 October continued:

Location as above

212 ♀ juv. Spizella passerina arizonae skull 1/3 clean, slight fat (C.B. Koford) ^{coll.}

19 October - Lloron

213 Rana

(J.E. Ellis)

20 October - Lloron

214 Sceloporus

(J.E. Ellis)

215 ♂ Melanerpes formicivorus L. test. 2mm (C.B. Koford)

21 October 1 mile E of Summit of Santa Clara Canyon,

Sierra del Tido, Chihuahua, Mexico [6500' elev.]

216 Sphyrapicus varius nuchalis (C.B. Koford)

20 miles S. of Gallego, Chihuahua Mexico 5000'

217 ♂ Amphispiza bilineata 14gms slight fat test. 1mm skull 1/2 clean (C.B. Koford)

[= Cañon Oscuro] Side cañon (S) of Santa Clara Canyon, 5 miles W La

Panita, Chihuahua, Mexico 5400'

218 Fish from stream (to CAS)

219 Fish from stream (to UCDZ)

22 October Cañon de la Madera, 23 miles SW Gallego,

Chihuahua, Mexico 6000'

220 ♂ juv. Certhia familiaris albescens 6gms sl. fat (C.B. Koford)

221 ♂ Aphelocoma coerulescens grisea 88gms, sl. fat; testes 2mm; skull 1/3 clean (C.B. Koford)

Providencia Ranch, 18 miles SW Gallego, Chihuahua,

Mexico

222 ♀ Scaled quail Callipepla squamata juv., 76gms.

223 ♀ " "

224 ♂ " " L. testis 3mm

END

C. B. Kofoed

1968

Journal

Sierra del Nido,
Chihuahua, Mex.

July - August

1968

1

Journal

Chihuahua, Mexico, trip
(Grizzly Bear Project, for the Conservation Foundation)

To Delano, Calif.

8 July 1968 Departed Berkeley about 5 p.m. and drove down San Joaquin Valley to Delano. Self, wife Sue, & son (12 yrs) Eric, in our 1966 Chevrolet ^{1/2 ton} pickup with canopy. To ^{Desert, Calif.} Palm Desert

9 July 1968. Drove over Tebopapi Pass to Mojave, San Bernardino, and Palm Springs. There met Lloyd Tavis, who took us to Deep Canyon research area, a rocky canyon at foot Santa Rosa Mts. Stayed overnight. Over 100°F. today. To central Arizona

10 July Drove on to Blythe, then to Phoenix and east to a few miles past Superior, where we camped at Oak Flat in Tonto N.F. Manginita, small oaks, red rocks. Over 100°F. today.

To Las Cruces, New Mexico.

11 July 1968 Drove on through Globe to New Mexico and Las Cruces. At last, stayed with the Chas. & Thelma's near the State University. (2015 Huntington)

Las Cruces, N.M.

12 July 1968. Friday. Met Sandy Dick-Peddie, dept. chairman, and Jim Geminman, entomologist, at Life Science. (Ralph Baith due back soon.) Then to Juarez for tourist cards, insurance, & try at gun permit. Visited Juarez briefly. Returned to Las Cruces. Dinner at La Posta, Mesilla, with Thelma's.

13 July 1968. Shopping in Las Cruces, further talk at NMSU, then departed for visit to White Sands N.M. and on to Cloudcroft, elev. 8700', for final camping check and to await Monday. Campgrounds w. aspen, white pine, douglas fir, small oaks - juniper (chestnut bark), ^{+ Red squirrels} Steller jays, ravens, flickers. Overcast; not too crowded.



14 July 1968. Equipment repair & check-out at Cloudcroft. This is area where Wm. Bremer and I camped and collected for a few days in summer of 1950, en route to Chaparral w. F. Pitelka.

15 July 1968. Early, returned to Las Cruces, received mail, shopped. Then to El Paso and entered Mexico about 2 p.m. Simple glance in

Journal

15 July 1968

To La Parrita, Chihuahua, Mexico

rear end was only inspection. Various modern shopping facilities at Prov^a. Drove S. on good highway; customs stop at 20 km + Tuni^a (nr. Samalayuca). One area of pure sand dunes, in which saw tracks *Dipodomys*, lizards, snake, mouse. On to La Parrita, her restaurant at km. 1757, and 2.5 mi. toward Santa Clara to cattle guard, where camped. Oak w. 2 cm. acorns (, evergreen). Blue (nightshade?) flower w. yellow stamens, yellow compass; prickly pear, various shrubs, juniper, yucca on ridges. *Cactus* were had 2 dry grass nests in tree , and gathered grass; noisy buzzes. White large eggshell below. Firefly eve; thunder storm.

16 July 1968 Drove toward Chihuahua. Rancho El 45 (American, ~~near~~ Harrison), nr. km. 1743. Swainson hawk km. 1735. Pepper tree, mesquite, cactus, oaks near road. Black & turkey vultures. To office of C. Delgado Forestal y de la Fauna, 610 7^a (nr. ^{calle} Aldama - Necchi store), and met Miguel Salgado Gomez (boss), José Damian Garcia, & César Isidoro Mora (reforestation & fire). Salgado had been ordered by Hernandez Corzo to take care of me - they offered helicopter, ^{pickup}, & got ^{me} permission to camp on Jea ranch (Urbano Jea of Chihuahua, Rancho El Mestizo). Later met Gilberto Gonzalez Muzzquiz, ^[plywood co. head] who gave us use of his house on granja ^{N.} at edge of town. Stayed there - house, swimming pool, garden. Earlier, in office, talked with Hernandez Corzo in Mexico City by phone; he offered cooperation & wanted outline of program.

17 July 1968. Damian & friend ^{Flavio (sails & water)} arrived 1015 in govt. pickup. We went to Parrita and at 1315 started for El Mestizo. Road rocky, narrow, winding up stream bed, often in 1 ft. or + water. 10 miles to ^{Lyda (= Primavera)} Las Varas (a store & a few houses). Top of canyon 18.4 mi. from La Parrita, 1 hr. 45 min. drive, at 6500 ft. In canyon saw band tail, mourning dove, shrike, Oriole, flicker, & others. Agave common. About 6 miles of scattered small oaks,

Journal

17 July 1968

Rancho
To del Mestero, S. del Nido, Chih., Mex.

then cultivated fields of Mesquite on large flat plateau. Saw sparrow hawk. After about 11 mi. on plain, turned R. 90°. Saw raven. Black Angus cattle. After 6.2 mi., 90° L. - then more cultivated fields. (Passed store after 1.8 mi.). After 5 miles, cattle guard; right 45° and on 2.6 mi. To a corral, (= Corral de los Baños) west thru cattle guard, to bottom canyon, + toward mts. About 5 mi. on, (after some grass) entered valley. Great blue heron flying. Pines 30' tall - long needles; yellow type. After 4 mi. thru cattle guard; took L. of Y (to new ranch; R. goes to Mestero river and old MVZ camp area, but road bad). About 2 1/2 miles to ranch - corral, stalls, 2 houses; in canyon of adobe rocks (7200'). (said some: "a mestero is an unmarked beef.") Administrador is Juan Baeyza, a lean friendly cowboy. Lake 50 m. diam. (muddy), w. mallard ducks (tame). Kingbird apparently w. nest + feeding young. After some waiting around, Baeyza accompanied us about 5 miles up road to water tank at Lloron, 7700', in bottom of rocky oak-lined canyon. This was about 5.6 mi. from La Parita. Camped.

(Strix occidentalis) After dark walked up canyon; heard screech + called - 2 came; mod. large, gray face, no horns, pale center area breast (no conspic. spots). Called a long rising whistle, sometimes omitted, followed by series 6 to 8 barbs w. rising pitch and intensity, rather muffled and angry, sharp. Perched within 10 yds. of me; once together on same branch. Later heard Caprimulgus + por. well. Crescent moon; clear evening. Arroyo del Alamo, Lloron 7500'

18 July 1968. Turkeys (cochinos) called 6 a.m., + caprimulgids. 0730, left camp and walked up slope to NE. Flushed a Cyrtonyx + quail in grass + rocks. Mr. Jimenez called "~~~~~" (which) as flew. Saw robins, band-tails. Went 060° along ridge top. Pines - 3 main kinds; one w. 3 shot needles, One armed small cone w. ^{large} + ~~also~~ nuts, about 20' tall; only 07 cones on tree. Junco - red iris, white outer tail feathers, chestnut back; pale gray breast (are stretched over imm.?). Nuthatch in yellow pine.

Mestero for
 Spanish for
 of the "Mesta",
 grazing org.

Journal

18 July 1968.

R. del Mestano, A. del Alamo,
Sierra del Nido, Chihuahua

Tanager (red & brown). At least two flycatcher, gray, slight crest.
Spotted tanager. 0835, sharp "whoen" as 2 whitetails jumped and
ran (grassy oak-pine zone). Fleichen. Agave. ^{Agave} ~~Agave~~ w. tall yellow flowers.
Bluebird. 10900, to N. over canyon, & side canyon going N. ^{E.W.} [hd. Arroyo del Alamo] ^{Ojo de} ~~C. de~~
~~los Venados~~, w. old logging road, ^{use it} ^{top} ridge 8700'. Saw ^[600 high; prob. 8000'] ~~Citellus~~ (like
^{= variegatus} ~~brechyi~~) on lava boulders in grass, oak-pine-juniper area. ^{merian} ~~Scrub~~
jays, ^{or} ~~Steller~~ jays. Another pine, 3 needled, w. soft leaves, unarmed cone
1 1/2" long; old & 1st. yr cones on tree, & staminate cones. Oak rough
bark. ^(prob. 1000) ~~Acorn~~ woodpecker. Still 8700'. 2 ^{more} whitetails flushed. 0930, from
ridge, apparent summit of S. del Nido, 045°, 5 mi. ^{est.} Continued on 060° to
rocky point, low pass, up ^{8450'} ~~manganita~~ slope. Saw ^{D.} ~~Douglas~~ fir;
walked on to NE. Saw swift, ^{= borealis jamaicensis} ~~Buteo~~ (black throat, cream band chest, light
mr. tips below wings). Large iguana (Sceloporus magister-like; black band
throat; banded tail). 1010, my ridge going 110°; summit 050° about 4 mi.
1015, w. 25' pine w. sev'l chamber bark gone to bare wood, especially
large areas mr. top, & at intervals 2-6', as if by climbing animal. No
teeth or claw marks. But gopher (?) burrow ^(no) ~~mr.~~ base dug up for
4', & 2" diam. dead branch broken off. Possibly ^[yes] lightning, as trunk partly
split; no other such trees seen. / Largest acorn about 8 mm. long. /
1135, still going E., into 40' pines (3 no needles, stiff, long), same w.
(unarmed) green cover. Saw 5 whitetails one group (grassy, fairly open). / Found
^(Onco caniceps?) junco nest on ground; 4 bluish eggs (photo); under grass clumps, 3'
from tree trunk. / Diggings w. rocks to 4" diam, or of badger.
Chipmunk. Raven. Agave in bloom. / 110°, course 330°, ^{altimeter,} 8700'.
Black-headed grosbeak in oak-pine. / Summit 050°, few trees ^{= Alto del Mestano}
Tanager; yellow & red; 2, 0' apart, in oak & pine. Flat area w. open
stand pines, w. 30 m. wide pool and earth dam, at 9000' = Mesa

altimeter
sticking

Journal

18 July 1968.

R. Mestero,
S. del Nido, Chihuahua, Mexico

de las Venados. Sevil Steller jays some sites. Warbler (?) w. streaked breast; tail feathers white center, black distal. Small nuthatch, light gray breast, in pine. / Lunched near ^{puerto} pond and C. de la Cruz. 1200, ^{sparrow} ~~sparrow~~ hawk on pine; brown w. black spots. I saw 3 white tails; one w. ^{white} ~~white~~ anthers in velvet. / Descended W. into ^{Ed. Anaya del Alamo} ~~Canyon~~ ^{del} ~~de~~ ~~los~~ ~~venados~~, where (sugar) ^{white} pines, Douglas fir, & old sawmill road, 1245. Saw tawny large ^{apache} ~~Scorpus~~ w. black back descending Douglas fir. / A lobed oak ^{white} here; first place seen. (sugar) pine cover to 12"; green ones & old ones. Cliffs, a refugio ~~canyon~~ ^{were}. [prob. 48000'] ^{altim.} Bottom canyon 8500'; I descended to S. (190°). Two spotted towhees in short bushes at bottom. At 1350, a 3 m. wide ^{altim.} pool in creek, 8200'. And at 1405 reached main canyon at old mill site. Then down canyon to camp (2:55); saw sevil spate w. piles coyote droppings en route. / Baeza said a ♀ wolf trapped (?) ^[later got skull; Muz spec.] in next canyon E. not long ago; he gave a skin & head to man in Chihuahua, where it is mounted. Also that 3 years ago food crops good of acorns & piñon, & many bear tracks. Much precip. this year, so expects good food crops for livestock & wildlife. Said wolves taken by traps & poison, occasionally. He had never seen a coon or raccoon. Contrary to Damian, he said menonites rarely hunt. Also that Bea had 2 serious abdominal operations & had not been to ranch for months. / Up canyon from camp, 20 more turkey calls in evening (no gobblers). Owl ^(Strix) hawks started nesting at dusk, & Caprimulgus calls. No rain today; clear evening.

19 July 1968. Rain & lightning at night. In morning, "tied" horses gone - due and I

Journal

19 July 1968 (Thurs.)

Rancho El Meñeño

Sierra de Mido, Chih., Mexico.

A.

departed on foot at 0700, up canyon (de los Álamos) for 50 min., to ^{left} turn up head of A. del Álamo of ~~C. de las Animas~~ (50 min.). Saw apparent wolf track in sand on way. We ascend-

0810

ed old logging road for 15 min. to pool, then up steep slope (rocks, brush, cliffs)

0835

to W. to top, & soon came to a barbed wire fence. From this, looked N. atop manzanita ridge; / Turkey calls prob. ♀♀, up to 8 "unha" in series. At one point


(8700' indicated elev.) [prob. 8000' or less]

in canyon saw many old cones of squirrel-salen cones (ardillon). 0755,

sugar pine cone

foot of turn N. up ^{Arroyo} C. del Álamo. Turkey calls; Steller gaid. / We heard and

saw a wolf for 1/2 hr., from ridge (much low manzanita). On rocks of cliff saw 2 chipmunks. Going N. on ridge, entered pines 0935. Also

madrone trees w.  leaves, 100 mm. long. The 3 kinds of pine present

(^{white} sugar p. in canyon only). Bunch grass about 400 mm. tall, & green (no new ^{hydro} flowers). Jumped 3 whittails (the predator call caused standing one to

fly). Junco (red in, chestnut back) common. Chipmunks on fallen

logs. Badger diggings. Mod. wind (5 kts. est.), cirrus clouds, & 2/10 cumulus. Much low Cantharus (?), especially in cut-over areas. (Baerza

said cut about 15 yrs. ago). / 1020, flushed one quail at 10 yds.; it

hit ground after 10 yds. flight; found no nest. Grass & cantharus (?) area.

[prob 8000]

1030, altim. 9100'. Walked 060°. Lupine in bloom. / 1040, hit good trail

[descends N. into A. de las Animas]

on ridge (rocks piled at side), almost a road. At top cliffs of arroyo to

(guacamayos)

NW (Los Animas †), heard & saw 7 parrots, in group; flew close over us, noisily, showing yellow bands under wings. (katharine exp.). / Saw

lightning-struck pine; 8" branch down; spiral split-up trunk, much bark off. / Flushed 3 whittailed deer. / 6/10 cumulus, increasing. Went

135° to head of ^Qjo de los Venados. Saw red violet-green swallows in pine woods, & small brown wren (^{house wren} ~~cantharus~~) in brushpile. 1200, at pass at

(prob. 8500' ±)

head C. de los V., 9300' indicated. Descended slowly. Stream ~~running~~ in pants.

1310, area of water & feed trough, where met Baerza. Here 8400'; large oaks,

See sp. acct.;

Canis lupus

Journal

19 July 1968

Rancho El Mesbeño, S. de I Nido, Chih., Mexico

a good campsite. Baeyza said a bear once slept in feed trough here (he has been at ranch 7 yrs.) Saw hummingbird w. green body, red bill w. black tip (straight + mod. length), black head & throat. / Saw Sci Citellus (heaneyi type) in draw nr. 8000'. Patchy. Below gentle slope, wide grassy areas, scattered oaks. / 0335, old log cabin, roof + much walls gone, and nearly a coral, rock well enclosure, & on ridge 50' above the "calaña" of Baeyza. This house of logs, high ceilings, tile floor, with 40'sq. central room w. 2 fireplaces, & once had plumbing, but now many windows broken, doors open, & stripped - last used 10 yrs. ago, but building still in fine condition and could easily be renovated as a biological headquarters. (My altimeter registered 7800'). This in Arroyo El Mesbeño. We departed down canyon (240°) where fair stream + dam; soon passed old adobe horse stalls & stacks (= former milk farm). We walked down road; canyon turned to S. or slightly SE; we took road near fence to E. and arrived at lower Mesbeño cattleguard after 2 hr. walk from cabin; from there, 2 1/2 mi. to present headquarters. Baeyza drove us the 5 mi. to our camp at Llano in A. de los Álamos. / Damian + Flavio had gone up A. de los Álamos to head of N. end, ascended to Mesa de Los Venados, & searched for bear sign. They found apparent droppings at edge manzanita patch near water (manzanita and juniper(?) berries). Tracks there were faint, but nearby ground torn up & rocks moved (lodger?). They & 2 cowboys searched various areas on mesa for bear sign. To return, they descended into A. de las Animas, next NW, & picked up a skull of wolf trapped (a few weeks?) ago. Erik brought in small rattler taken in rocks among manzanita. There is also a red-barbed madrone, now w. some green berries, scattered among oaks. / Rain about 4 p.m.

20 July 1968. No rain night. Flavio + Damian departed about 10 a.m.

for Chihuahua. D. is to have helicopter come p.m. of 22, for flight 23.

Erik accompanied this grp.;
he said boys took long
siesta on mesa.

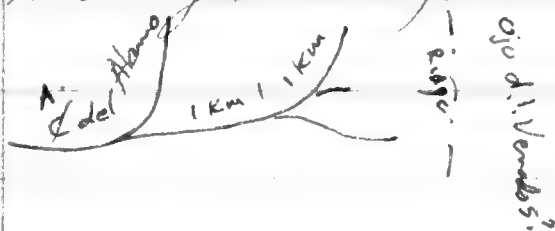
specimen

Journal

20 July 1968.

Rancho Mesteño, S. del Nido, Chih., Mexico
(old millsite; 1150)

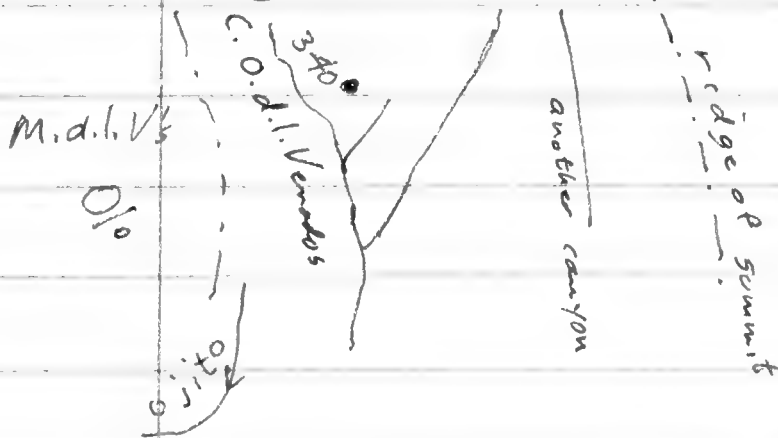
We departed on foot 11 a.m., up ^A Q. de las Alamos, part turn to N., + on to C. Ojito. 5/10 cormorants. Saw goldfinch; 6+ gray bush-tits w. black mask feeding branches oak bush. Above camp canyon ^{goes} 010°; gradually turn E. to about 100°. Saw ~~black-throated~~ ^{red-faced warblers (Cardellina)} ~~warblers (?)~~, red lores + throat, large white rump patch, blue(?) below eyes, black head, white crown, large white wing bar, white outer tail feathers. (In oak, canyon bottom). Creeper on pine trunk. ^{Painted redstart} ~~Another (warbler?)~~ - black head + nape, red breast, large white wing bar + spot, tail tips white. The canyon closed, with dark damp area near stream, going up Ojito, at first 070°, later to N. Lower part closed + dark; mossy rocks; stream - attractive area.



Head of canyon about 8900', in pines edge Mesa d. l. Venados, close to the little dam and 50 m. livestock pool. Found an

old turkey cañon. Near reservoir saw junco, redtail.

high mesa w. cliffs to S. [= Años Mesteño]
1-2 summit to NE



Grasshead (♀? - black hd. w. white line above + below eyes), yellow breast.

Nuthatch. Chickadees. Acorn woodpeckers.

Martins - one black w. 3 apparent flying young on dead pine; 1-2 ad ♂♂

with 2 young (?) in another dead pine, ad. fluttering at mouth of hole. Much twittering among all. We walked N. to edge cliffs (near a brushy knoll) and looked down into A. de las Alamos; deep, with pines bottom and NW-facing side. Pines about 060°. A dry range visible about 50 miles to NW. No overcast. Then we went SW to top of A. d. l. Alamos and (1530) started down into logged canyon w. much short brush

Journal

Rancho Mestizo, S. del Nido, Chih., Mexico
M. d. I. Venados

20 July 1968.

at head (Quercus, Ceanothus (?))

Freshly eaten cones of Pine

(yellow-long necked, and sugar-green cones) below trees (Sciurus).
(spine on branches)

Ceanothus (?) w. white flowers & some 0 fruits; flowers have sweet
"bee" smell. Tiny acorns (3 mm. long) on some low brush (knee high).

Paintbrush (red), fescue flower (= red Penstemon?) in bloom. Near

mouth canyon saw Pranga rubra ♂ + heard turkey "uh-uh" calls. /

Walked on back to camp, arriving about 5 p.m. Only light rain in
early afternoon; clear & calm in evening. No camp visitors (sh!). No

bear sign seen, but smelled skunk, & saw various fresh droppings

coyotes (?) in canyon bottom. / The 45 cm. rattlesnake taken
19th had 5 young inside, to 15 cm. long (saved some in formalin).

To Mestizo cabin

21 July 1968. Sunday. Drove from Llano camp (lv. 0930) past the
Roca Colorado (2 1/2 mi.), pond (3.3 mi.) to ranch Hoyt (4.9 mi.), where
talked w. Baiza. Drove back to colligator (2.3 mi.) + then NE on Mestizo

road. Parked 1200 on road poor, & walked 2 hrs. to Bea cabin in A. Mestizo.

Rain. Walked up river, ^{1/2 mi.} & back; fairly closed rocky canyon w. oaks &
pears. / In cabin, a mud nest of Hirundo barn swallow w. 3 young; adults

fed it, about 10 yds. into ^{room} ~~area~~ from door + window. In attic, 2 bats flying,

& a nest had 3 well-feathered wrens (reddish brown, dark crowns), which probably
could fly. / At night heard spotted (?) owl barbs from canyon, " ".

22 July 1968. Atlix, Cutania, near cabin; Arroyo Mestizo ^{Strix} hughbirds, occasional parrot,
many juncos (chests. back). Walked up canyon about 350°; much nearly
flat w. scattered oaks. Flushed 2 quail (never more than 2; nesting?) from
grass. 0930, 2/10 cumulus clouds; at mouth canyon branch leading 070°
(site of old MV 2 camp?). Went up canyon; much logged & now covered
with 1-2' high scrub oak (5 mm. acorns) and other shrubs. Met one

Journal

22 July 1968

Rancho Mestero, S. del Nido, Chih., Mexico.

Catalpa, about 1 m. long (photo; saw head only) in brush near rocks. 1030, area of scattered aspens. Showers. We ascended L. hillslope - brushy, rocky ("Cactus-island" formation). Rain increased. Crossed summit + descended to next canyon W. among conifers. Flashed rather dopey bird; large thrush-like, brown, ^(Myadestes) yellowish-white upper wing patches in flight, dirty white outer edge outer tail feathers. (Back to cabin in rain. Cleared about 9 p.m., walked 2 hrs. to car down Mestero canyon. Water most of the way; passed adobe of old ranch. Canyon flanked by stratified rock cliffs. (Apparently parallel Arroyo del ^{Alamo} to W.). ~~Came~~ Angus cattle. Drove to ranch hdy. + camp. (Fireflies abundant; ed nearby; hard rain night. (Helicopter, expected, had not shown up).

23 July 1968. Good weather; no plane arrived. Juan Baeyra accompanied us to store ("51" - after Mennonite camp name), 18.3 mi. from ranch hdy. Ranch and store, eggs, flour, cans, etc. - essentially no fresh stuff; meat adequate for needs. Juan said "encino blanco" at lower elev., + sometimes bears there. Said saw a plateado 3 yrs. ago, when his corn + piñon crops good. We saw L. gaillardii on plain, + 3 half-grown short-tailed ground squirrels. The oaks extend about 3 mi. S. of fence at Mestero Y + alliguard. With supplies, drove back on Mestero road; left car, + hiked to Zoa calaña. Saw shunk ^{Procyon} + coon tracks on the way. / at tienda "51", woman ^{proprietor} reported that a "león" was Felis concolor seen in draw nearly less than a week ago; far from trees + rocks. / Clouds started over Sierra at noon + increased, but no rain. Camped at cabin as before.

A. del Mestero

24 Julio 1968. Lightning, rain, night; drizzle to 0830. Hiked east up the river (Mestero). Rock walls increasingly close. River about 10' wide. Area of open. Saw hantle around - 1000 at a time. Canyon river about 070°. Under a yellow pine, fresh con con (Sciurus); 10 cm. green cones on trees. / 1005, canyon turn-
ed N, then 030°. We ^{ascended} ~~rose~~ canyon side, going about 310°. Ascended to crest

Journal

Chih., Mexico

26 July 1968.

Arroyo del Mestizo, S. del Nido,

walk NW of house, flushed 2 quail & 1 whitetail. / Sue & I took trail to W. & SW, paralleling stream but $\frac{1}{4}$ - $\frac{1}{2}$ mi. N., then turned NW (2 mi. from cabin) to go toward Mesa de Los Venados, above ^{Ojitos.} ~~Ojo~~ Flushed whitetail in oak-grass area. Brown tyrant w. ash throat in oaks. Good view to S. of cliffs Mestizo + plain beyond. Pipe mungueta in rocky area, S. aspect. / Arrived head A. del Alamo, where I passed first day out (about NW of cabin), & on to mesa. (altos Mestizo, 050°; 3⁺ mi.). Flushed bandtail from flowering stick nest in oak. Altim. read 1100' above cabin. Cu-stratus clouds, E. wind 15 kts. Juncos very common, & brown tanager. / Flushed 2 separate tylosideros from alongside down logs on grassy mesa. Bunchgrass to 12" (green), w. taller old stalks. Many Angus graze here now, among oaks, pines, taro. / 1205, reached the low brushy knoll near NE corner of mesa (1500' above cabin). Ceanothus (?) w. white flowers, some faint. / ^{A.} Plunked at edge of de las Animas, where about 200 sq. ft. ground torn up as if by shovels, w. small pits dug. / About 200 yds. E., near edge atop cliffs, came upon apparent bear droppings, semi-solid, 38 x 80 mm. largest, 3' from base of pine (about 300 yds. W. of pass at hd. O. de los Venados). Contained many ants & a few small beetles; saved for exam. / About 4 droppings, perhaps only 1 day old. No definite tracks found in area. This ridge should be a "natural" crossing route for bears. / 1410, reached pass (1400' above cabin) and started down to S. 1500, reached the "carreras" [= Ojo de los Venados] "carreras" of cattle water + feed, & large oaks, a good campsite. Saw the "warbler" w. blue-black head, black upper parts, large white wing bars, white under b. feathers, black sides + red breast; greenish mouth. / $\frac{1}{4}$ hr. downstream to first branch canyon to NE, & $\frac{1}{4}$ hr. more to second (larger). In bottom, flushed bandtail from same nest as once before. Still about 5 p.m. when reached cabin, but no rain. Coyote droppings common on trail in bottom.

(have Kodachrome)

Journal

Mexico.

27 July 1968. Sat.

A. del Mestizo, S. del Rio, Chihuahua,

have
Kodachrome

Half overcast. Canyon warm by cabin. We packed & walked down canyon to car, 2 hrs. Met a green Crotalus w. narrow black bands near stream; it retreated under old fencepost (collected). Heard turkey calls in canyon. (Road poor, tho a Ford 1/2 ton perhaps w. 16" wheels made it to Ben's cabin; we did not try.) We took leave of Baiza, then drove 3 mi. S. of cattle guard & rested, to wait out rain. Soon a pickup came; it was Armando Rayval, ^{16 + 19 yr old.} and sons A. and "Lalo", who had ranch nearby, ^{near} at Corral de los Baños (Rancho Panapaton). They spoke English & invited us to their ranch house, near edge of the large low bouldery hill N of Santa Clara, by Arroyo Palomino (lower part of C. del Llano). On plains saw 2 L. gaillardi; one seemed to be chasing the other. White fur apparently erected when fleeing. A green Bubo landed in grass at edge of a gully, & a mockingbird dove at it repeatedly; we flushed owl, which flew 1/4 mi. to tree, where mockingbird again attacked. About 7 p.m., when still light also saw Chordeiles flying. At corral, dipping Hereford cattle which had been marked earlier in day. Vaqueror, branding, branding, mud, & roast testicles. Saw 3 more couples of L. gaillardi before reaching ranch (The boys said that 2 shot over 100 in one night.) Rayval had gone to Iowa State; boys to Culver. Wife, Alicia. 8 children (Lalo, youngest). Had other small ranches too. A. was president of Rotary Club in Chihuahua. Locals came & sang w. guitar, accordion, in eve.

28 July 1968. Sunday. Watched cattle operation at ranch. Armando said formerly turkeys & quail at ranch; now none, tho he thought pasturing better & cover no less. Said put out 1000 about every other year, & had not heard about secondary poisoning or restrictions on use. I saw carcass of bold eagle on fence; said killed by poisoned (strychnine) carcass about March; saved skull. Ranches here since 1942. They say Monaster overwork soil & have reduced yields. Live in constant fear that govt will take

Journal

28 July 1968.


Rancho Parapetbas nr. Santa Clara, Chihuahua, Mexico

and break up ranch. Knows nothing of bears, but assumes have to kill them because they kill cattle. ^{Armando} Wife is in-law of Urbano (Zea ^{wife's} sister wife?).

Saw shrikes along roads. | Visited Rancho del Alamo, to inquire about use radio. Eggs. 10± bandtailed in canyon above headquarters. At edge plains saw both black-tailed & white-sided jacobinlets. Hdqtrs. 6 mi. from good dirt road; about 10 mi. from "Surtidor 51" store.

29 July 1968. Mon. Tried to drive to El Baranga, store near Santa Clara, but stopped by high river. On plains saw ravens. Near house, grackles & house sparrows. Shopped at 51. Then to C. del Alamo, where camped.

30 July 1968. Clear morning. "Caporal" at ranch is Sebastian Barrera, there 28 yrs.; L. eye blind. Administrator is ^{Rm} Ramon Prieto, who comes about once a week, & communicates daily by radio at 7 a.m. (80+ yrs. old). Ramon gave permission to camp on ranch. Reached Damian, who said helicopter coming tomorrow, & truck today to bring fuel. I walked up canyon & N. above river. Flocks to 12 bandtailed. Some acorns in canyon over 1 cm. long, but green. Thought I heard a [prob. scrub woodpecker] large woodpecker ^{Mexican} drumming. Acorn woodpecker, scrub jays, & dusky-tailed ground squirrels common. Cow house ^{sparrows} ~~sparrows~~ common near barnyard. Thrasher w. orange iris, short slight-curved bill, in oak. Camped above highest water tank, in rock-cliffed canyon w. 10' wide clear stream. Mt. tops about 020°, but no road toward.

31 July 1968. Wednesday. No rain last night. Helicopter landed us. Hdqtrs. about 9 a.m., 1 1/2 hrs. from Chihuahua, but truck w. fuel not until afternoon. Weather bad by then, so no flight. They brought fuel for only one 2-hr flight, & return to Chihuahua! Rain midday. A red-flowered ^{Phlox; Ipomoea? (sp?)} ~~coarse~~ ^{coarse} forb in abundant flower , & hummingbirds fed on these. |

In afternoon, a rushing sound, & our clear stream turned to a

Journal

Mexico.

31 July 1968.

Rancho del Alamo, C. del Alamo, Chihuahua,

muddy mass of flatslam about 50' wide in a few seconds. Luckily we were clear of the flood. About 3 p.m., took walk to N. Thresher w. short white tips tail. Much deer sign. Small oaks, shrubs, grass, on rocky undulating ground. Heard no turkeys, saw no quail. Moon first $\frac{1}{4}$, waning.

Caprimulgid calls evening.

August

1 July 1968. Departed 0700 for helicopter trip. A broken fog layer

around peaks, esp. on NE side. Pilot Capt. (P.A.) José Arroyo. We crossed ridges at Ld. Mestizo, just W. of Altos del Alamo ($9000 \pm'$ by altimeter in plane) & descended on NE side. To await clearing, landed & waited. Then to oppo-

site Ojo Laguna Cuimilla, where waited again for fog to rise above C. Campana.

Eventually flew over this. [C. La Campana] A red-rock canyon just S. of La Campana main canyon, & on top a small lake. Soil red, river few, & vegetation

much sparser than Ld. Mestizo area. Then down canyon of Santa Negra creek, which was green grassy w. widespread small oaks & rock outcrops. Back up C. de los Prietos, leading W. from the "town" of Cuimilla, long, straight, rising into pine ^{Zone} ~~grass~~, well-wooded in bottom - seems good bear highway, worth further exploration.

Then over Mesa de los Venados & saw heads of small piney canyons to N. of this, & over C. de ^{La} Madera (road), & back to ranch.

Barely time for this single circuit. Mostly went about 70 mph & 300' up, so poor overall ^{view of terrain} ~~view of vegetation~~, the good ^{look} ~~look~~ at vegetation. Took hadochromic pics. / Plane & truck left, after lunch & beer w. Ramon Prieto. / Barrera showed us well preserved

lion skin of ♂ shot by him 2 yrs. ago when it tried to attack a girl at ranch headquarters. He also said they had killed 6 or 7 lions w. poison. Once he poisoned calf carcass & a few days later found lion dead near it. He walked about

Journal

1 August 1968

Rancho El Alamo, C. del Alamo, Chihuahua.

hills much, and often hunted for walrus & lions, but last possible grizzly seen was 5 yrs. ago (judged by color). He said grizzly leaves claw marks in tracks, but black does not. About 3 yrs. ago he found modern tree much scratched up & limbs broken as if by bears, but found none. He said that "El Mocho," the grizzly, last finger in wolf traps. I left foot at 1340. 8/10 cumulo-nimbus. Walked N. above rim canyon. Many carmine droppings. Pinon-oak mixture. Went 2 hrs. slowly, then W. 1/4 mile to a narrow red-rock canyon (= C. Escandido) where no trail, many ^{cliffs} shaded vegetation; big oaks, pines - no bear sign. Flushed a caprimulgid. Out of canyon. 1715 to camp. Many chipping sparrows in pinon-oak area.

2 August 1968. Clear but slowly clouding. Hiked to N., departing 0830.

Fence 0900. 2 whitetails flushed. 0920, ripe manzanita berries on rocky slope, but no signs animal feeding. 0940, at edge of rocky small canyon heard & saw 3 ^{Accipiter} Cooper(?) ^{hairy} jays. Called uh-uh about 7/sec., rising notes. Atop cliffs & in pines. (Nest area probably.) 2 perched 10 m. apart. Creeper on oak trunk. Saw the black red-breasted ^{painter} warbler again. 1115, on ridge crest, apparent top of Alto del Alamo ^{035°} about 2 mi. One live oak had many acorns > 1 cm. long, green; but much variation among trees, many having none, & no ^{obvious} change in size w. altitude. 1205, 2 quail flushed, one at a time, giving descending squeak ~~~ in flight; were near water seep on rocky slope near grass dumps. Much manzanita on ridge (about 1200' above camp (7100) level). This ridge apparently between Martínez & ^{C. del} Alamo drainages. I descended steep slope to M. river, among big pines, aspen, ^{white} sauger pine, lobed deciduous oaks. Fair trail here, & remain logging road down canyon. On bottom 1245; trail up about 335°. On grassy flat, old timbers, ac.

Journal

2 August 1968

C. del Mostaño & del Alamo, Chihuahua, México

[old saw mill]

if of former logging operation. Brush fields (& alpine appearance) probably result of logging. Many old signs general fire. About 20 hd. of Bea cattle here (some of Alamo cattle, Kofords, seen above hogtr.). Flushed quail by trailside; ^{scree} calls; dove into cover after 20 yds. Purple footglove in flower; red lupine in flower; penstemon; Indian paintbrush. Scrub oak some < 1 cm.; barely larger than cups. I continued upstream until 1430, when about 1/2 mile short of divide.

Hilly pine forest; some deer, chipmunks, ground squirrels. Masked brush-tits in flock. 1600, at spot where descended to river. Tried to go down river, but too cliffy & headed 240° or farther W; so scaled slope to ridge again, and back toward camp. Arrived 7 p.m. (dark 8 p.m.). Altitude registered 1350' above camp at highest pt. (8450'), but probably erroneously high.

3 August 1968. Prepared for 2 nights backpacking. With Sue & Erik, departed 1000, to N + E, & at 1430 arrived on Mostaño R. where yesterday. En route met a 4' Crotalus in short brush & rocks; no stom. contents. Red Amarites conspicuous in pine needles some sparse. Walked 1 1/4 hrs. farther up canyon & camped above fork. Short rain afternoon. Heard & saw 10± parrots in evening; we see a few nearly every day, never over 7 together.

4 August 1968. Overcast. Altitude indicated 8350' (7150-7100 at Alamo camp). De-

parted 0730 for hike up to summit. First 1/2 hr. up canyon to pass at river. En route saw 2 deer. Mostly low oak brush, open stand pines. Commonest oak large bush was chengraspin-like, w. dentate leathery pubescent leaves, golden brown below. At pass, fine view to N. toward Rancho El Nido, down precipitous canyon.

In an area, ^{white} sugar pine, Douglas fir, torote, piñon. We walked thence to next pass (1/2 mi.)

E., the ^{head} ultimate head of the Mostaño. No horse trail either pass. To N., the deep V canyon, yellow-red rock cliffs, wooded w. oaks, pines, ash, conifers - the later extend about 1/2 mile down canyon. This pass about 8750' indicated alt. We ascended peak to ^E where 9500' indicated (prob. < 9000'). Sugar pine; bar-tailed

Journal

4 August 1968.

Top S. del Nido, Chihuahua, México

regions, flicker. Allos Martínez mesa low 205°. On bushes, grass, on rocks, thousands of red scinnellid beetles w. 6⁺ black dorsal spots - why only on high points? Took hadachmanes - highest peak still to E. We headed for thin "Chingirapin" and mangajito slopes; m. berries ripe some later. On up ridge - rock formations, pine - needle flats, brush, to the apparent highest peak on rim (9900' indiv.).
Time 1150

Peregrine
Falcon

Fine view all around - ridg. sq. mi. of pine forest to E. & S. Canyon even in rocks. A ♀ juv. Peregrine soared by cliffs at close range. Good views toward C. de la Madera. Bandtales, parrots. Found no cone cones (Sciurus) at upper levels.

Back to camp, getting into waxy canyon once (& losing on lower). Erik had red tent set up; a very large green hummingbird w. short white tip in tail had been visiting the tent during day. No rain. Heard no caracaras or owls at night.

5 August 1968. No rain night. 3/10 convalescing morning. Left 0730 to explore to W. near rim. Descended 9500' (indiv.) peak on rim, where fine views to N. & W. over rim area to Mesa de los Venados. (Trail up from Ranch. del Nido must ^{reach} top this area).
(no)

Mesa of Allos Martínez close, 250° about 1 km. Took photos. More "lady bugs" here.

Parrots, bandtales, bluebirds, juncos, deer. Once I toothed my predator call; there was a snort behind me & a ♀ deer dashed to point 50 yds. away & looked about, nervously. At another tooth she came 10 yds. closer - looking for hidden fauna? Much country to explore in rim area. We descended to camp & departed 1150 for ranch helpter. 9/10 convalescing. About 1 p.m. found ^{white} sugar pine cone fresh detritus, m. Martínez R. Arrived C. del Alamo camp 1710. Bats flew close & coprimulgids called in evening.

6 August 1968. Dine at Santa Negra ranch, so left C. del Alamo. To 51 store, then W., S. 6 mi., & W. to hd. of canyon down to La Parita. On ^{high} plain saw one Swainson Hawk. Mesquite fields ended and scattered oaks started about 6 mi. before reaching cattleguard at start descent. Rocky, cliffs, scrubby oak trees. About 1 mile down (of 8 1/2 to Primavera), saw

Journal

Mexico.

6 August 1968.

Rancho Manta Negra, 5. (de Nido), Paparín, Chihuahua,

Trogon^s

trogon (coppery-tailed) fly by road; then another, apparent ♀. About 3 more in next mile seen from car; one apparently the larger "sized" trogon (white tips on tail in flight). Cassara lusher w. red berries. Gate to Manta Negra ranch about 1 mi. E. of Primavera houses (some food + beer available there), 5700' indicated alt. Road into ranch little used, w. many creek crossings, + impassable about 1 km. from ranchhouse. Walked there + met José Damien and friend Flavio, who had arrived about 3 p.m. (They had a couple of other city boys w. them, + one was shooting at everything with scope sighted 22.) A dam + lake over 100 m. across - w. 1 duck (Daisy? - pale blue specimen) on it. Apple orchard. Old ranchhouse, apparently used only for cowboy camp. No one present to question. Mostly open hilly grassland w. scattered small oaks + occasional outcrops ~~crosses~~ red rock cliffs - not good bear country it seemed. We camped below ranchhouse + the 4 boys left for Chihuahua. No rain; much dew.

7 August 1968. Back to Primavera village, where talked w. a conspicuous

man (mayor?). He said 8 days ago hard rain that washed Llauder's dam mountain + wrecked roads, including one about 20 km. up canyon to W. (C. de los Prietos). Said at head, tall pine, + quercu mayor. He seemed to know country + ranch. Said up that canyon were some "tinajas" (pools?) where bear tracks in fall. Said 4 days ago a lioness w. cub killed silver near this town, but hunters did not get her. Later I saw him on good horse near town. Constant long-ash cigarette in center mouth as talked; 60 yrs, heavy set, slope house in town (name?). Offered to loan horse for look up canyon. We biked up C. de los Prietos past adobe, then cattle grassland in bottom w. red rock cliffs to sides. Good stream 5 yds. wide + clear. Braun towhees, thrashers, black-b. grosbeaks, scrub jays,

Journal

7 August 1968.

Nr. Primavera, S. de l. Nido, Chihuahua

chipmunks, ground squirrels, Cnemidophorus + Sceloporus. Many
acorns 1-2 cm. long, & many in ground some sites. Walked 80 mi., to
where red cliffs close to about 150 yds. A few pines to 60' tall
here. Firwood gathered w. burros. Many Hereford cattle. Returned
down canyon (worth exploration farther up). / Then drove back E. up
Santa Clara canyon for 3.1 mi., to tributary from S. & near dam to N, &
camped (6200' indicated). / Departing 1415, Sue & I walked up road to
1/2 mile from top, looking for trigona & animal sign. A couple of good
tributaries off to NW pass with exploring, as former reports bears
near road (Damian, 3[?] yrs. ago). Many scrub jays, ground squirrels,
in canyon. Saw one 4' Crotalus on road; rather lethargic, & no inclination
to strike when bothered (the common olive brown x x kind). Started
back ^{down} road 1630. Saw 1 quail edge road. At camp, heard screech(?)
owl, cominulgid, at night. About 5 trucks passed during day.

8 August 1968. Left camp 1030 & drove to Primavera. Saw mourning dove, road-
runner, en route. Then on about 8 miles to cattle ground 1.6 mi. E. of
^{Parrita} ~~same~~ at last, indicated alt. 5150'. 8/10 cumulus at noon. Drove S. 6.8 mi. To
gate of Agricultural Sta., & 2.8 mi. further to (locked) gate to ^{La Campana} ~~the~~ Canyon on W. we
were seeking road to enter close to Cerro Campana; ag. sta. road to foot of
we work, but prob. no trail there. Canby said a trail up to ^{La Campana} Canyon, just S.
of Cr. Campana. Inquired at one ranch; then S. again to Rancho Herradura (Oscar
Ruiz, but no one there), which owned La Campana area. Then to Rancho 45^{rd.} (opp.
Toro rd.) to inquiry of vaguero, who was loading Payral cattle there. Then back
to Rancho Arco Iris, S. of Parrita a few mi. Quiver (Perez) absent, but one
man accompanied us to next ranch S. (Luis Terraza?), where we
obtained permission to use road to foot of Canyon Machón, where
old trail led up to top. This road started opposite two old small

Journal

8 August 1968.


Co. Campana, N. of Chihuahua, Chih., Mexico.

rock + ^{adobe} ~~adobe~~ houses near entrance of Yebanier (E. side highway). Gate wired + stapled. Rough road led up to edge canyon at mouth, + even on down into it a few hundred yds. Camped at edge, about 6000'. Thick growth oaks in canyon, + many boulders, red rock cliffs; canisone droppings, wild grapes (ripe), + ripe manzanita berries. Good view of plain to E. Road bands indicated no volume or lines in this lower country. Bats, night hawks, + poorwills, screech owl, cat. etc.

9 August 1968. Departed 0800 for hike up C. Madrón to top. Much ~~summit~~ ^{summit} in lower canyon, including one (or three?) w. red berries (dry). Trail much washed out, so little use. / 0900, we saw 2 juv. ^{Aquila} golden eagles soaring near red cliffs of canyon - white base tail + ~~and~~ ^{area} under each wing w. "palm". / Flushed band-tail from nest w. 1 fresh egg; 8' up in brush. / Ascended hillside, brush, oaks, boulders, + cliff bottoms, + arrived on top rim 11 a.m. Much manzanita w. abundant ripe berries there, + scattered small pines + tarate. We walked ridge S. toward Co. Campana summit, but soon saw further trail to S. cut off by ^{Campana} ~~Tae~~ Canyon (deep; red rock cliffs). So walked around to S. of Rd. Madrón canyon + entered rocky rolling area brush + 40' pines, with intermittent pools in bottoms (good water). / Saw 4' rattler (^{molossus} ~~Crotalus~~), the olive-xx type, stretched on rocks; at disturbance, it fled under boulder. / We explored bottom of rock - pine canyon to W. - water; many cone-coes (~~Scuieria~~); robins, flickers, jays. ^{Douglas} ~~Douglas~~ fir, sugar pine, tarate, small oaks. Dry open stand; many ^(saw none) ~~polywogs~~ in pools. Deer sign, + some canisone (fox or cat size) droppings. Many cactus. Many columbine flowers bottom. Returned to edge top Madrón C. + started down 1520, w. shower approaching. Reached narrow area cliffs (50 m.) at bottom canyon 1700, + arrived camp 1730. Saw 1 ~~Sylvilagus~~ by trail. Much lightning, rain, at night, but nearly dry ^{next} morning. 10+ night hawks flew over about 1900.

10 August 1968. Drove down to Agrio station, where having a field day. Then N. to

Mileage - going N.

Ag. Sta.	0	ca. (1746 Km.)
1.0	Rock hses E. (rd. to Madroño, w; gate)	
1.4	Yerbanis rd (E)	
3.6	Arco Iris (1752)	
6.1	Blue restaurant w	
7.0	Parrita (Km 92) w (1757)	
10.9	old restaurant, w.	
12.3	turn $+5^{\circ}$ NE	
13.1	gate E (Laguna) (1767)	
15.4	gate w	
17.4	R. del Alamo rd E; Provid. cattle g. w.	
18.0	start turn  (1773)	
18.6	050 -R 30° ; going uphill	
21.0	Km 1780	
23.5	Km 1782 Train track.	

Journal

R

10 August 1968

Nr. Rancho Providencia, S. de l Nido, Chihuahua

explored road to Providencia ranch & environs. (First gate 2.9 mi.; college road, 4.4 from carretera; 7.1 to ranch hdqtrs.). Saw roadrunner; redtail hawk. No adult ♂ or ♀ at ranch; ^{said children.} hunting deer; 3 families there in fairly neat wooded area w. orchard trees. 1 Raven - 14 on fenceposts nr. La Parrita. 1 scaled quail near R/R crossing; 1 roadrunner. From ranch drove NE, about 305°. Passed wood gate 2.3 mi.; another, in rock wall, after 7.5 mi. (crossed 1 mi. S, & summit 215° wogates). About 11 mi. from hdqtrs, ground lowering, soil red; many pepper bushes. Jackrabbit (black tailed); 2 Mexican hawks. Many mounds of small Citellus spilosoma ground squirrels scattered along route, tho few squirrels out midday. Saw many kingbirds; meadow larks; shrikes. Continued on 13.6 mi. to a plastered ramblower w. windmill on plain; then turned SW & drove 34.3 mi. to headquarters of Leon del Alamo ranch. White-winged doves in yard. Only one resident family. No lions, wolves, bears, they said; this ranch includes grassy hills but not the oak or pine belts to S. They said P. C. del Nido about 1/2 hr. by car, the third day ago. We went that way. 7 hour gate, creek. 7 hour 4.5 mi. from house, a track leading W. (a presa to E). .3 mi. on, gate, & entered scattered oaks. 6.3 from ranch, gate; water in creek; road to S. up canyon. (Possibly 1, 1.5 mi. E. of us we finally took) We explored 3 mi. farther on, but found no road leading toward peaks, so (= Otájarito) back to the 6.3 road. Went about 2 1/2 mi. up this road & camped in grass among oaks by mossy stream. (Said hatched yds. up road, said old mine [manganese mine] shafts & piles of red rock (cerro?)). (About 8 p.m. I stepped on a Crotalus in grass nr. bushes, 20 yds. from stream, & it struck my pants' leg; collected this one, which is fourth kind we have seen. But hot net across stream, but no catch overnight. Much poorwill calling in night. Near mine flushed 3 outlined white tails, saw with fair fair but still in velvet. One road today saw 10+ scaled quail, run over 2 together. Also saw roadrunner sitting on top of wooden fence post! Some rain eve. 6200' indie. alt. at camp.

specimen
coll. 3816

To NW

R. bar

0

2.3 mi. wind g.

3.6

cutting

" low point

wind g. 1 north wind 7.5 Rb. 215° ind. 305°

Journal

11 August 1968. (Sunday)

N. C. del Nido, S. del Nido, Chihuahua, Mexico.

We ascended sev'l hundred feet up a peak to observe rim of Sierra & take photos. (C. del Nido seemed to be right E.). Much green ocotillo. Ocon woodpeckers; black & yellow bird (oriole?). A clear 100 m. lake foot one canyon ^(Cement Dam) ^{to E of} ~~near~~ us. Then, (from Pajarito gate) back to the road along foothills, & 3.8 mi. to ranch E (R. del Alamo). Then 17 mi. NW to highway, & 17 W. to El Carmen for supplies. Small town but fresh fruits, eggs, staples available, & gasoline. Then 38 mi. to El Suero. Much grassy rolling country, often well mounded with Clethra? mounds about 20 m. apart. ~~Large~~ almost no habitations. / at first (N. of Rincon del Alamo Alamo) ranch area (= El Plano?), saw black-t. jachalbird, & fine 4' Pituophis (?), yellow w. red-brown large dorsal spots, which ^{fled} into rodent burrow. In damp area m. ranch, grass green & tall, & pepper bushes to 15'. Mourning dove common. / In morning, near R. Rincon del Alamo saw one Montezuma quail on road; so probably envelope scaled quail here. / We drove on south past Providencia gate & entered barbed-wire gate to W., 8.8 mi. N. Parita m. km. 1771. Camped among pepper bushes. In eve with flashlight saw 20+ ~~stragoo~~ rats (+ Perognathus?) in open near bushes. Set Schuyler trap & caught a woodrat. Many burrows in area. / About 5 times during night we had fine yelping coyote chorus, perhaps 1/4 to 1 mile away. Overcast all night, but no rain. Clearing next morning.

12 August 1968. Monday. We had date w. José Damian and friend Flavio to make overnight trip up Cerro Campana, where Flavio said he knew country from hunting & often ("siempre") saw bear tracks near Torolabe & other places. So went to Agric. Station sign to wait - my note of Aug. 10 still there. / We saw perched Hummer hummer near La Parita. / Didn't come by 1 p.m., so we left note & drove N., turning to W. off highway to Rancho Providencia (7.4 mi. in; cattle guard about opposite road E. to Rancho del Alamo). Foreman Fortin ^{Hernandez} (sp.?) still in Chihuahua but expected

Distances

Going NE

0	Rincon del Al. hdy. o	+ 2.4m	bu gate	4.5	rd to sa (Presaur) → C de la Madre
4.8	bu gate				
5.6	algae creek				
5.8	bu gate (rd. to s. - mines). → C. Poyante				

Rincon del Alamo → E-W rd (El Can. - El S.)
 o R del A (go NW)

+ 5.3? Plank coral

7.1 Ranch hse. (damp area) R. Plane?

10.7 " " (Varas?)

17.2 Rd. straight 3430 to hwy. (Km. 33. coral)
 Then 17 mi. W. to El Carmen

37.7 El C. → El Seco (gas - Km 1820)

(Mina El Mojino rd. - 46.12 mi. E. of El C.)

Galligos - 4.8 mi. S. of El Alamo.

19 mi. S. of Galligos, turn R. and cross RR tracks.

8.8 mi. N. Poyante, bu gate on W. - good camp.

Old settlement (English spoken - used) - on Am 176 f, 4.2 mi. N. of Poyante.

Journal

Mexico.

12 August 1968

Rancho Providencia, S. del Nido, Chihuahua,

so waited until after 4 p.m.; the boys (Damián & Flavio) soon overtook us. From R. Providencia headquarters, go W. through gate and after about 200 yds, SW toward mouth Canyon del Nido in fairly straight line. One muddy crossing w. high center. About 13 mi. to this point ranch. Among several rough bldgs, a fairly modern house, presumably for owner when ^{present} ~~present~~. Fine view up canyon to S. at red cliffs + crest of Sierra del Nido, summit being almost S. of buildings but 3000' above. We met foreman (here only 9 mos.) who let us drive 1 km. up the C. Las Varas (E.) fork on old road & camp; clear stream 25' wide. Grassland, oak, cypress; many cattle. Foreman said no lions or wolves bothered stock. Damián & Flavio returned to Chihuahua.

13 August 1968. Clear night, cool during morning. Camp 5900' i. d. (0:28.5).

Departed 0805 for hike up Las Varas branch, said to be 3 hr. horseback long, and to "always have beaverholes" near pools when water low, according ^{to Damián} ~~to Damián~~. The canyon led SW (Higuera fork to S), then about 200°. Many ^{fine large} ~~large~~ cypresses in bottom, some over 2' dbh. Oak, yucca, agave (jijote). Met cowboy Roberto Espinosa, here over a yr. & formerly at R. Terrenater, who said had never seen a bear here, but thought likely in canyons near rim to S., & C. Higuera. He knew of no trapper with lions or wolves. Stream high and canyon walls narrow, so had to cross & recross many times; gave up this route after an hour & returned toward camp, taking S. fork (Higuera) at 0955. Small clear stream; many cattle on in Las Varas. Rough red cliffs; oak, cypress; poor trail or none. About 1215, reached wider bottom of oak-grass, w. abundant acorns (small, long, thin) on ground & in stream. ^{about 6900' i. d.} Bear droppings, still formed; seemed to contain small seeds, ants? beetles, manzanita berries (no acorns). Found down rotted log w. many parts pulled off, as if of bear (?) searching for grubs and termites. Canyon bed split, going on SE up brushy slope, & turning S. between cliffs toward rugged crest. This canyon gentle rise

(odm.) mi.					
43.5	0	L - Ranch P. → W.	went gate		
18.5	5		back crossing		
20.4	6.9		went gate; given redhead down. after 200± yds.	Take 1/2 L. nest	
22.8	9.3				
					Ranch Higgins, 20 Nels.
					(26.4) - 12.9 mi.


Journal

MEXICO.


13 August 1968 Tues.

C. del Nido, S. del Nido, Chihuahua,

URSUS

no stock, large Douglas fir, piñon, madroño, ash. Went SW. Streambed dry. | about 7400' i. el., bear droppings about 50 yds from creek, on among grass clumps near oak bushes. 6 pieces to 4.5×7.0 mm. Ground (rocks) same ton up (lodgers?) nearby. Usual manzanita fruits in dropping; photos. | Cone snail (parrot?) rare. Band-tails common, some on nests. | at edge streambed found possible bear track  10 cm wide, like ball + toe marks foot (no claw marks). | 1500, found a spring, 7600'. No bear tracks near. Canyon seemed headed to SW \rightarrow El Terodero, but not sure so started back down route up, living 1500. About 6900', 5 yds. from dry stream under oak, another well-formed bear dropping about a wh. old w. many manzanita berries. (Collected parts of various droppings.) Also found at least 2, apparently ~~de~~ of bears, but degraded into piles. Most bear sign seen yet. Saw a few whittails on way down. Many acorns ripe + fallen, but little evidence eating (not ^{bad} to human taste). Had found 3 gp. well-formed bear signs, fairly recent. Reached camp 1830.

14 August 1968. (Wednesday). Light rain night. Departed 0850 for hike up

jeep road + trail to summit, starting up main del Nido canyon + taking fork S. up "El Terodero". Initial stream 8' wide, clear. After $\frac{1}{2}$ hr, going 250°; then S. up track road. (Passable by pickup to about 6700', where small old stone hut; then washed out). Much livestock. Parrots; turkey vultures; jays. Oak, cypress, juniper, increasing piñon. Fairly direct ascent. At 7000', abundant acorns on ground (leaves  leathery, dark gr. top, whitish below; acorns yellowish at base). Water ended 7300' (1042). | One mossy boulders near bottom, the black + white ^{red tint} flycatcher w. red abdomen; narrowly fed, tail spread (3 white outer rectrices). | 8400' i. el. alt elev., large piñon; 2 parrots sat together atop 60' pine stub + let us pass 50 yds. distant (nest area?). Canyon head V-shaped. Reached high branch where many small aspen; there a stone pile indicates trail, up right side, switch-

Journal

14 August 1968

Rancho del Nido, S. de Nido, Chihuahua, Mexico

Looking to summit in a small gp. pine on rim, about 9200' i. el. Reached rim 1255, about 4 hrs. from camp. This point at ultimate SE head of the Mestizo, about 1 km. W. of Sierra summit, where we passed on trip from Rancho del Alamo. (Small ^{Small} springs 10 + 20 min. toward Mestizo). Found ♂ deer carcass near high point trail; perhaps 1 wk. old; coyote droppings of deer hair there, but no bear sign. / Atop rim in grass flushed ♂ ^{Montezuma} quail, which gave "guk" calls & ran back & forth in grass w. wings low, within 10' of me. I searched for nest and 3 tiny chicks flew / And a good base for exploration at high levels; Ranchos del N., del Alamo, Mestizo within 4 hrs. hike. At 1515 we started down to N. on trail. Flushed a *Sylvilagus* in bunch grass. Back at 7000', 2 deer stood in trail 50 m. ahead of us. Back at camp 1815. No rain during day; but always threatening, every day. Curiously, Damian had apparently not known of this trail, & questioned cowboys had not mentioned it.

15 August 1968. Wed Thurs.

Departed 0910 to walk up C. Los Varos, ^{Ternis} w. ~~low~~ shoes for the many river crossings. About 1015, near tributary from R., I saw a *trogon* flying to a perizon atop red rock cliff, in area ocotillo, bromeliads, oaks, and big cypresses. About 1045, three narrower part canyon and in flatter bottom, no cliffs, smaller stream, & occasional tributary canyons. (Lost livestock here too.) Continued on about 160°. By 1125, had made 33 water crossings. 1145, grassy flats, sparse woods, damp ground, many 3 ^{petals} ~~petals~~ red & yellow lilies. Flushed doe w. fawn, perhaps 20 lbs.; smallest seen. / ^{Cyrtomys} Quail - flushed & w. 4 ± half-grown young; ^{he} she ran back & forth, wings trailing, as if "feigning." Within 2-3 yds. of us. / Later, flushed ♀ alone with 4 ± tiny flightless young, dumpy & longit. striped (tried to photo her, & w. chick which Erik caught in hand). / Grass, mesquite, small oaks, ash; stream about 12' wide, shallow here, & canyon opening toward head, leading

Cyrtomys
chicks

Journal

16 August 1968. Fri.

C. de la Madera, S. del Nido, Chihuahua, Mexico

and one, apparently attracted by game call, circled close over trees & us.

Rain, light hail, lightning. We descended to a pass & down canyon toward camp; found small spring. Band-tails, black & white & red flycatcher, wild ^{= painted redstart} (1" long) onions. Nuthatches. at bottom, open stand yellow pines, tall. Red acorns fallen, so every footstep covered a dozen or more trees. Usual flickers, acorn woodpeckers, Mexican jays, house wrens, spotted towhees. No bear sign. Took 2 bats (3814, 3820) in mist net over trough in evening.

17 August 1968. Sat. Departed camp 0900 & walked S. up ridge between

C. de la Madera & C. del Nido. Rocky, brushy, but good views. On way up,

in bottom, flushed Montezuma quail, which landed after 10'; fluttered wings; she had 2 or 3 running chicks. In pines saw 2 large juv. Accipiter, calling (^{probably} Cooper's hawk?). We were on ridge (S. of bald rock areas) after 1 1/2

hrs. from camp. Little deer or carnivore sign on ridge, but manzanita ripe & good. Arrived peak (9300' i. sl.) 1310. We were at edge head of ^{A. de} Las

Ánimas; extreme head is at mesa of Altar Madero, ¹⁶³⁰ 160° from us, about 1 mi. Saw chickadees, juv. Buteo, flicker, & usual birds. No water visible, but

various pine slopes. Descended first deep canyon W. of us; some horse tracks as if used for travel. No bear sign. Many ripe choke cherries along streambed

area in bottom. Back at camp, visited by Carrillo from P. del Nido. He (1955 or 57) Chy I. García said grizzly was killed about 1 km. from our camp, on hill to ^{W SW.} SSW.

He said only springs were in small canyon leading W. from near our camp, & suggested looking for bear sign there. He also said he knew of

caves where bears hibernated, & that they contained piles of Tascate (branches?). He had guided Adler in trips to crest on horseback. Small

man, perhaps 40, & slow clear talker; thinks he knows mesa where bears are, & may be good guide. He said bears move about, in one

canyon one ^{month} month another the next. No rain night. Bubo call at night.

18 August 1968. Sunday. Sue and I walked 1 1/2 hrs. slowly up

Journal

Mexico.

18 August 1968. Sunday. C. de la Madera, E. de Nido, Chihuahua, canyon leading W. from camp. Few pines; oaks, brush, rocks. But intermittent 3' diam. stream, + signs camping. About 500 yds. up canyon found grassy small open flat, within 50' stream, where 5 piles of ^{Ursus} bear droppings in 5 yds. diam. Contained mangonito whole berries, but also small and larger seeds, unidentified, but not Brunner. No insects or acorns apparent; collected sample. About 1/2 mile up stream, no more droppings. In later look in lower parts, on a body flat area by stream under oaks found more piles of varying ages, at least 20 in all. Some well formed + perhaps only 2-4 wks. old, and others decomposed into components. This is most bear droppings seen in one area yet, + bears further search in ^{drier} dryer canyon, or watching for bears. Perhaps other rather low canyons, under 7500', also have bear sign. Searched creek sands but found no bear tracks (many of deer). Many boulders near trail had been moved a few inches or 1-2 feet, as if by searching canivore, + some of them weighed 20+ lbs, too much for badger (stock might do it, but so neatly?). But no signs scratching under the turned rocks. Heard badger digging in the area. / Flushed ^{Mont.} quail, later 2, at different points near stream. Returned to camp, which must be in bear travel area. / This morning a road below camp, one of the 4' ^{olive} Crotcher; first seen in this canyon by us. Also piles coyote droppings, + old skunk carcasses.

19 August 1968. Overcast night but no rain; overcast morning. Heard whippoorwill calling at dawn, about 0600, + hummingbirds buzzed close at their house. Ready to return to La Campara + meet Flavio + Damian this evening, as planned. Drove there, talking w. Camarillo (El Nido) and ^{Fortino} Fortino (Providencia) on the way. The latter had been here 3 years in forma of La Providencia, but said he had never seen a grizzly. As usual, saw

Journal

19 August 1968

Hr. Co. Campana, Chihuahua, Mexico.

road runners, scaled quail, on drive across plain. Met Damian and Flavio, and we camped (in rain) at head of Rancho Experimental road at Hr. Co. Campana.

20 August 1968. Departed about 0800, walked across slope 40 min. to edge C. Madroño,

and ascended, reaching top about 1100. Saw in canyon, 2 spots decomposed droppings,

mostly consisting of manzanita berries (accumulations from coyote?). Met one of

the 3' olive ^{C. molossus} ~~Crotalus~~ on trail in canyon, another in grass + rocks just before

climbing up. Grapes ripe low in canyon, but only in a few spots. Fair nos. choke cherry (capulin) bushes, but no ripe fruit. Little water in creek bed, but most vegetation

green. Bears - Flavio said his party had seen one during hunting trip in early 1960's,

and he indicated sites in high rocky areas around top of Madroño canyon. Last, in

1965, was tracks only. All were black bears. Mostly rocks, boulders, columnar

red-rock formation, w. open stand pines (Pinus) ~~Cupressus~~ on N. slopes,

including Pinus, & occasional Cupressus near streambeds. Water in scattered

ed pools, but probably some algae around. Few deer droppings (we saw 2

in a day on top, including fine ♂ in velvet). Badger diggings, lightning-struck

tree, & occasional coyote or fox scats. Some large scats on ridgetops

contained manzanita only, it appeared - no insects, bones, hair - so I thought

was improbable. Deer tracks in dense ground, but little else. I saw a

varied thrush in conifers, and several siskins bathing in pool. No rain

during day; increasing cumulus. No signs horses or cattle. Yucca in bloom.

In evening heard no scrimulids, but with flashlight saw much eyeskin,

as of foxes or ^{Lynx} ~~Felis~~. Camped in cave shelter. During afternoon we explored in

different directions in the high rolling country, mostly in areas of conifers,

manzanitas, & streambeds, but no bear sign.

21 August 1968. Wed. No rain night; 3/10 cu stratus 0700. More exploration. I

headed SW to head of one branch Muloño Canyon (latter deep, w. conifers in

bottom, & north exploring from Santa Elena Canyon side). To S, the deep &

C. de la Madera to Providencia

Camp	0	
Locked gate	+ 1.9	
Dirt road	+ 3.3 more	
b/w gate	+ 1.2	
Press to S.	+ .6	
the gate	+ .9	Branch S. up Pajarito, to old mang. river
Green III gate	+ 3.9	Take off to R. el Nido hdy. 100 [±] yds. W.
Wood gate	+ 4.3	
Iron pipe gate \equiv	+ 3.9	
Road	+ .9	
Cattle (Prov. Ranch)	+ .1	$\underline{\hspace{1cm}} = 20$
b w gate	+ 5.6	
Highway	+ 2.9	
Take S. to		
" La Perita	+ 10.9	

Journal

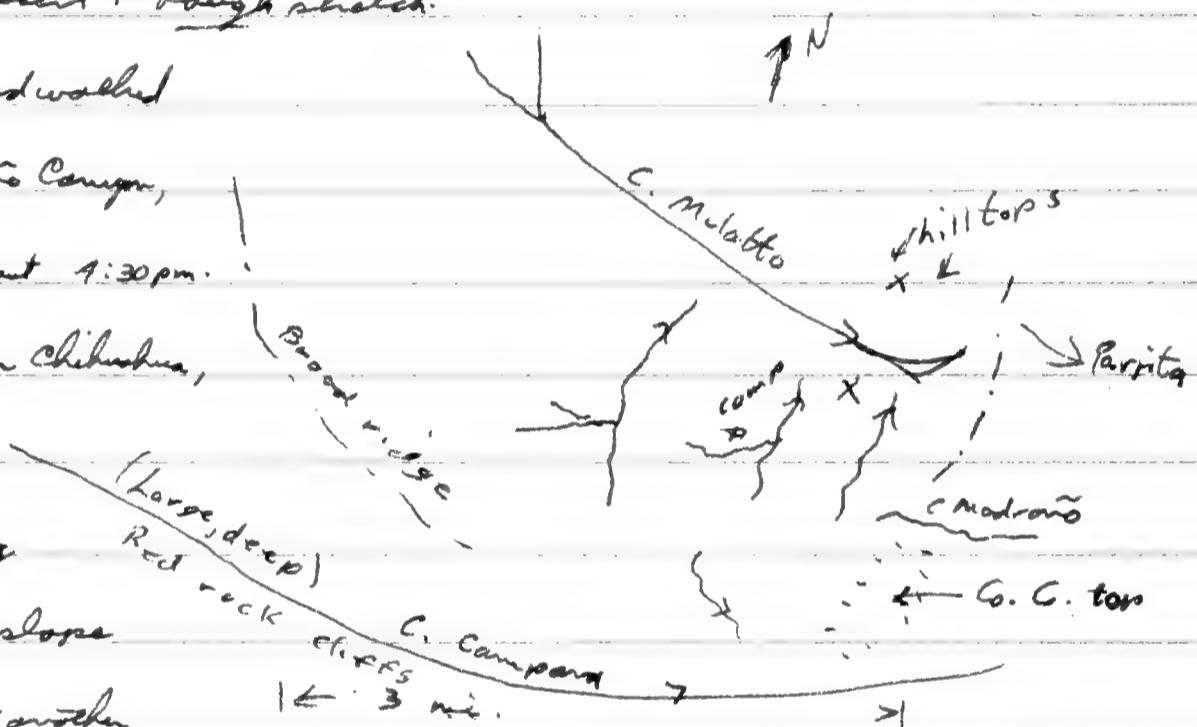
21 August 1968

Nr. Co. Campana, Chihuahua, México

dissected red-rock canyon of La Campana, but no reason to suspect gizzards are there. So about 15 sq. miles of undulating ground on top was main searching ground. Home track at pass nr. Ld. Mulatto Canyon (from Marta Negra Ranch?). ^{Falco peregrinus} (1" dark 1/4" light) Hawk - a peregrine (? juv.), landed strongly across lower side ^{weirs,} ~~wood~~ flew over calling 'Ah?' in squeal, repeatedly. But few raptorial birds present. Rough sketch.

We departed noon and walked back down Madroño Canyon, arriving at cars about 4:30 pm.

The boys departed for Chihuahua, and later we did too. In crossing rock-grass-shrub slope toward camp, met another



olive Crotalus (audible to some at 100'), and flushed a porvill (no white on wings). Drove to Chihuahua & stayed motel.

22 August 1968. To office Forestal y de la Fauna, where submitted brief report on results so far, for transmission to F. Hernández Corp. Then w. Flavio D. and J. Damian, visited Lopez Escalera, taxidermist & former well-known hunter. He lived in fairly nice house, w. many mounted heads and skulls, most poor by U.S. standards. (He was said to be unfriendly to F. & E. men because they had fined him for not having taxidermy license.) He talked readily and seemed grateful for audience - in fact, garrulous, with a mixture of detailed, hunting stories, localities, and species, so that very difficult to follow accurately. Much hand waving & acting out - bolt action, loose, bear etc. Obviously was ^{once} a fine hunter, as shown by photos of 1930 or so (w. several wolves), but now too old. About 70 now & somewhat

Journal

22 August 1968

C. Chihuahua, Mexico.

(Had lost eye in gun accident.)

water-eyed, apparently he had been professional hunter who people called in for predator control. One story told of Ramon Prieto of Rancho del Alamo, who employed him. On that occasion he said he saw 3 bears (kind?) which had died of poison. Lopez C. very strong against poison, as no one got meat, hide, or sport out of it, & seemed to blame poison for present scarcity of bears. Walter he thought more astute, so not eliminated by poison. One hunting story, w. photo of grizzly, related to Canyon de los Prietos (W. of Pecos). At least two hunting stories involved grizzly which came very close to 25 m., tho he threw it then away and w. been no use. He said find grizzlies in all sites, ridges, cliffs, & bottoms, & that active mainly mornings & evenings. He mentioned turning over large stones (kind bear?), & leaving hair on catclaw as passed. He said tracks of 2 kinds in very distinct, but gave only claw length as specific difference. Also he mentioned an "oso Colorado," which he thought a different kind, and said there was a "palomero," a cross between grizzly & black bear. He thought there could still be grizzlies, if not in S. del Nido in other ranges, as they walk from one to another when conditions are difficult in one (dry, little food). A range near Coronado he mentioned specifically. His idea was that grizzlies gradually retreated N. up the range ^{extending} from C. Chihuahua to S. del Nido. He said mounted grizzly from Chihuahua in museum at Santa Barbara, Calif. It was very difficult to get definite answers to any question, as each would send him off or over yawns. Damian thought main value of L.E. recollections would be a map of sites and dates of grizzly kills, and said he would try to get such. / We said our goodbyes & drove toward Chihuahua, camping in brush desert near (N. of) Villa Ahumada. Some towns flooded from recent rains.

Going N.

Chihuahua to RR above Parrita = 71.9 mi.

RR to El Aveso 23.8 mi.

" " Parrita 48 mi.

Journal

23 August 1968To Las Cruces, New Mexico

Drove to Juarez, stopped, then crossed border. Mexican officials waved us through without a glance, but U.S. man entered truck & panned around, but no problem. Drove to Las Cruces and visited with C. Thalers and Ralph Raith. (Later to Berkeley via Santa Fe & N. Rim Grand Canyon.) Took no gun this trip. Specimens no. 3811 through 3820.

See Also: species notes, C. lupus, 18 July 1968
and Catalog


See Journal, October 4 - November 29, 1968.

Canis lupus

18 July 1968.

Rancho El Mestazo, S. del Nido, Chih., Mexico

A.

C. de las Arvenas, about 8000' level, saw and heard one 0840⁵⁰ - 0925⁵⁰ f. (Koda-
chrome of area). We (A. K. & I.) on ridge above & 1 km. distant. He in brushy
area in small clearing, apparently alone. Open rather dry country. Put ^{note} note
vertical & gave long moaning howls, about 10 sec., rising about 3
notes, starting about C or D pitch. Usually rose through host, sometimes
going up & down or descending at end. 

have
Kodachromes
of site

After fallowed by 2 or 3 (usually) short barks. Head horizontal between
howls. Body "cane can licks" or crows; black back. Called 15 min, then
as we stood up (on ridge) he walked away. But occasionally howled or barked
again, & I saw him walking up shallow draw about 500 km. W. of
first site, occasionally stopping. We both ^{had} binoculars, but could see him w.
naked eye in sunlight in clear air. | Previous day we saw apparent wolf track
about 1/2 mile N. of Llano in canyon bottom. Many jiler seats along
path; like coyote, some w. many mangrove berries (now soft & abundant).
(CBK 3811) [♀]
In afternoon, cowboys brought me wolf skull of one trapped
recently in C. de las Arvenas, which lies N. or N.W. of C. del Llano.
^{A.}

C. B. Koford

1968

Journal

Sierra del Nido,
Chihuahua, Mex.

Oct. - November

C. Koford
1968

Journal
Fall Trip to Chihuahua, Mexico
(Grizzly Reconnaissance project.)

October 4 to 11, 1968

Berkeley to Las Cruces, N. Mexico

E. San Luis Obispo Co., Calif.

Picked up car, 4 C Y-ton open pickup, pm. of Oct. 4. Drove to Davis to prepare to leave. Departed Monday, 7 October, and drove via Los Baros and Coalinga to Cholame, where visited with Alan McMillan. He had seen adult with 4 young bobcats several times during the summer. With him, morning of Oct. 8, visited site of fire in chamise, grass, and Cauleth perica on Canyon Ranch. (S. of Shandon a few miles). Tree with eagle nest (a young hatched April 4) partly dead now, but we saw an adult flying nearby. In nearby canyons, cover gone - a hot fire apparently - where the best quail hunting had been. (Later Jan Mc M told us he saw a covey of 150+ quail in the burned area.) The long strip at between dry pasture & dry grass hills that was seeded to 3 kinds Atriplex last winter now had scattering of plants up to 3" high, but long plantless areas - Jan said grasshoppers had hit the plants, & that the native polygona survived best. (One plot enclosed w. boards & wire on top had 1 1/2' tall plants.) Transplantings at edge of a cultivated field were flourishing, however - 3-4' high. And some seeded strips in another cultivated field had Atriplex 3' high (planted last winter). Jan Mc M. said he had trapped 2 bobcats in his yard this year and had shot 2 others - apparently a good year for rodents. A clutch of barrow eggs in an old shed fledged 8 young. This ties in with accounts of abundant rodents in other areas this year. Many deer in Palo Prieto canyon (saw about 25 driving to El's ranch in evening.) Quail now in large coveys. Jan said year unusual in that first clutches of year were successful. Departed midday 10 October and drove via Bakersfield and Indio to Salton Sea. Next day drove via Tucson to near Danning, N. Mexico, & continued on to Las Cruces next morning. Final shopping and preparations. Stayed

Odom.

12529 leaving Juarez (324 km. to C. Chih.)

548 = km. 2000 to Mex. P.F.

553 - sand & Atriplex

km 1900 - sand hills to W. 5 mi.

77 - sand at road; some brush on.

12661 El Sueco

685 ~~Gallegos~~

684 ~~Gallegos~~ Grand R.R. track

700 La Parita - then W.

Journal

12 October 1968

Km. 92, nr

To La Parrita, Chih., Mex.

with Dr. Ches. Thelen of NM State Univ., where joined in evening by Steve Hermer and Jim Ellis, UC Davis grad students. Off to El Paso in morning 12 October and, after various delays, started down road 45 toward Chihuahua. About 30 mi. out, fine sand ^{area} with many mouse tracks. Atriplex w. narrow leaf laden w. winged seeds. Near Samalayuca, sand dunes to 100' high a few miles to NW + E, but sand near road had mixture shrubs. Over a gas (?) works S. of town about 100 mi. S. of Juarez, 60± ravens - at first I thought it must be a slaughterhouse. / One probable Suavirion hawk. / feathered cumulus clouds, & apparent rain over mts. to W. / Arrived at La Parrita (Red sunset on clouds to W.) after dark. Drove toward Santa Clara C. and camped just through cattle guard. Sprinkling, overcast, & much lightning in evening. (Not dry in Oct. !)

13 October 1968. Light rain last night. Coyote chorus to N and SW about sunrise. 7/10 cumulus-status. A sharpshin hawk flew by about 8 a.m. - open grass - brush - oak-chump zone. / We drove on about 2 miles to near site old MVZ camp and camped near 80' red rock cliffs + stream (5 yds. wide & running well) about 1/4 mile on (2.3 mi. beyond cattle guard N. of Parrita) about 11 a.m. I started exploratory walks to lower parts 2 canyons leading S by E. + S. by W. from area old camp; the W. one dry wash, the E. one running, many with pools 5-10 m. long + 1 or + m. deep - swimming water beetles (?) which dove, 10 mm long, & many fish to 50 mm. / In base of thick tall brush ridge at edge creek I saw a coral king snake lying quietly. When I disturbed it a Peromyscus ran out of the clump and ran about as if confused. I put snake in bag. The mouse still confused, in open. Saw a leopard? frog with narrow mouth. Hat, barred, cu-status, but breaking up. Returned to camp 1430. Acorns - many dry on ground, w. some cups still on trees, and green acorns some trees. Acorns small but plentiful. Along trail in a canyon bottom, fairly abundant predator droppings con.

Journal

13 October 1968

5 mi. N. Cerro Campana, Chihuahua, Mexico

resting largely of seed coats. Some mainly of tina (cactus fruit, purple, w. distinctive marks), which is abundant & dropping from prickly pear stems; good to eat - like grape-flavored guava. Juniper bushes w. green berries. Madrone bushes w. abundant soft sweet bright-red berries (some fallen). Ocotillo w. yellow leaves; a few with red terminal flowers. Red berries on a blue bush. Flocks 20+ small (chipping?) sparrows now. Occasional flicker or acorn woodpecker. Flocks of 20 to 50 mourning doves. Rare deer tracks. One killdeer by river. / Steve Herman saw probable pair Falco mexicanus over cliff.

14 October 1968. Local vaquero, here on Tapia Ranch one year, said he had never seen bear tracks, but formerly there were ^{bears} ~~pass~~ up Canyon Oscuro (runs S by ^E from here). Next canyon to E. is Rio. Former has water year around. / We departed 0830, left our car at adobe, drove other to Chihuahua City. Saw many turkey vultures (no blacks) on way. Called on Jose Garcia + Miguel Salgado at Delegación Forestal. No new news of bears. Garcia said he would get more exact info on recent kill of 3 bears (1 adult) near "cerro de cuatros" or Monte Negra. He said they had given permit as several cats had been killed. / Stopped, & departed north at 2 p.m. Drove both cars up Santa Clara Canyon; road now far better than in August. We looked for but saw no trogons. 8 mi. up from ^{15 mi. + 2} La Parrita, elev. 5500; took a ^{CRK 3822} Dendroica on road. (In photographing in sun, noted that exposed tightly curled red tail and hid its head; Steve Herman photoed this posture.) Above Las Varas school (Prenmura), parts of stream dry, & in upper mile or two nearly all dry. In upper parts some long-leaved pines & Fraxinus, & many jays. 18.8 miles from La Parrita (set at 5000') to crest. ~~to~~ 24.6 more via "51" stre to Corral de Baños. Arrived 1830, & rain thereafter for 4 1/2 hr. Saw Lepus gaillardi at the Corral on on toward Rancho del Mestizo. Also a few Dipodomys on road. Grass

Koford
1968

Journal

¹⁴
¹³
14 October 1968

Rancho del Misterio, Chihuahua, Mexico

about knee high & mostly bramy, but shorter herbage grass. About 10 miles from Conal to cattleguard entering Misterio ranch. ^{Andropogon} "Little" bluestem common in last mile & near cattleguard. We camped near here. Fine evening coyote chorus to S. Occasional small owl calls. Storm cleared; calm & clear then.

15 October 1968. Morning clear, dewy. A pedregal w. canopy came down

road w. Urbano Gza, Jr. and sister. U. probably late 20's. He said that Sr. Delatore?

bears (de la Torre) of S.A.G. in Juárez was working with bears, had a bear trap on truck, & had brought some from New Mexico (?) to release. Re bears seen on J.C. Canyon road in 1963, sister said she was with Urbano ^{Sr.} ~~at~~ ^{at} time & saw bear, which he said was a grizzly. He said that at least 19 head were lost (1961?) to a big grizzly, so they put out 1000 poison in baits & bear disappeared. They also offered reward for killing (grizzly?) bears & told vaqueros to shoot them. Urbano Jr. thought that poison had finished the bears. Re lions, he said no recent trouble; usually bother only in drought years. (Was abundant bear sign near MUZ camp in Misterio canyon result of drought?). He also said a bear killed a calf on the Peritor mesa (W. of ranch hdqtr.) a year (?) ago (according to Juan Baeyra). Weather - U. said usually last rains in late September, and a frost or 2 by now. Grass very exceptionally lush, so winter feeding probably unnecessary. Turkeys - he said a Memanite recently on ranch and shot turkeys, which he first attracted with food. / Acorn fall in hood Santa Clara Canyon was light, and also near cattleguard to Gza ranch. / At the pond at headquarters, 2 large sandpipers (white band on spread wing; white breast; barred rumps up & down when standing. Vaqueros out rounding up cattle, so did not see Baeyra. But drove on up canyon to Lloron to Camp (7300' indicated). Stream still

Adobe (near old MVZ camp) to La Parita -

1.9 mi. to cattle guard, 2.6 more to highway (4.5 total).

L.P. South - L.P. 0.0

Blue restaurant .6 mi.

Arco Sur 1.8 mi. (highway turns eastward)

3.9 mi. (" " W.)

Road W. to C. Madroño 5.9

Rancho Exp. 6.9 mi.

Chihuahua (green arches)
sign 56.5 mi.

⁰
La P. to Mestizo -
(5000') Cattle guard 2.6 Adobe 4.5 Stone house - 6.5

Adobe & corral 6.8 Las V. (Perruina) to bldg. - 10.5 (5700')

Dam to N. - 13.7 Summit - 18.8 (from L.P.)

Turn N 29.5 Turn E 35.7 Corral de B. 43.4 (then
down into canyon & turn N. toward mts.)

3rd cattle guard - 53.7 Ranch by. 55.7

Wire gate 57.3 Pond 57.5 Red rocks 58.5

Otrough 60.9 Lhorn (tank & spring pipe) 61.0

Journal

15 October 1968

Rancho de / Mestero, Chihuahua, México

running well, but some dry spots within 1 mile upstream. Road poorer than in early July; we had to detour or repair worked out places. Arrived about 1130 (5.2 mi. above Hdqtrs.; ~~6.6~~ 6.1 mi. from La Parrita). Took local walks, reorganized gear, set snap traps. I set 15 near spring + pipe, trying for shrews. Saw many bandtailed pigeons, jays, juncos. Canine droppings common along road. (This morning saw flock of 100+ apparent parrots flying ^{over} near saddleguard to Zoo ranch.) (Yesterday saw flocks of 20+ ^{mourning} doves in lower Santa Clara Canyon.) A big frog (Rana pipiens?) fairly common at Lloron. Also saw garter snake here, & in pond at ranch Hdqtrs. Heard no ~~and~~ turkeys in evening. Ash trees & aspen turning yellow. / About 9 p.m. I walked a few hundred yds. up canyon & gave owl hoots. Soon heard spotted owl calls from slope to E., in about area of last July. But owls did not come closer. However, after I returned down canyon they followed, & often hooted on ~~steep~~ slope E. of us. Usually ^{two} 's, and occasionally the rising whistle.

16 October 1968. Wednesday. Still at Lloron. Cold clear night, but no frozen water.

About 0609 a few Strix calls. About 0630, turkey gabble, & soon another one; I thought up and across canyon, in area owls first located. / My traps held 2 Peromyscus (truei?). / Departed 0830 & walked up Arroyo del Alamo. Mod. breeze; clear. At site old sawmill 0915. (Stream ended about 1.5 min. above camp.) Many Steller jays in pines there; ^{few} chipmunks too. Leaving N. up old logging road, water in lower part of canyon ^{and} at streambed crossing 20 min. up; then dry above. Found no bear sign near water. Saw bandtailed pigeons perched in one pine; others, flying, common. In oak & ash, 2 apparent Townsend warblers (no black). Saw rufous-sided towhees in 10' live oaks near bottom. At 7700' level, white oaks (4" leaves; undulant margin) yellowing & browning, losing foliage. Ash trees yellow-leaved, conspicuous. / Two redtails wheeled

Journal

Mexico

16 October 1968

Rancho del Moxteño, S. de Mdo, Chihuahua,

over pines. Issing slowly, reached top on old road at 1145 - at W. edge of Mesa de los Venados. Bluebirds, Junco caniceps + phainopepla common. Mesa about 8200'. I walked NE to pass at head of ojo de los Venados. Most of mesa weedy and moderately dry, with few birds, but green understory. Red berries on madrone; large (10+mm) spherical berries on juniper, and many on ground (fairly edible). Saw no deer, but tracks + droppings fairly common. 4 ravens flew over. Saw no parrots. Searched for bear signs where found in July; none, but apparent lion dropping there (grey, w. much hair). / Acorn crop seemed light; few on ground, + some small green still on trees. Freshly eaten cones of dry pine cones (Acacia) on ridge. Quercus bush w. abundant green (bitter) fruit. Saw lizard active at 8000'. / About 1330, returned to Mesa de los Venados. In pine tree, ascending trunk in pines, a Certhia ^(?), woodpecker - banded back, black breast, yellow abdomen, white base tail; bill shorter than flicker. Also saw sapsucker ^(?) mottled back bands. ^(?) (yellow-bellied?) with red forehead + throat, white malar line, large white patch edge wing. (Jim Ellis thought he saw red-bellied sapsucker too.) / Flock 50+ pine siskins feeding on grass heads. / For 200+ yds. around water pool (dammed), vegetation greener, grass prominent, + many birds. / About 1530 I left mesa + descended W. into ^{A.} C. del Alamo. About 15 min. N. of camp, in bottom, I saw 2 leaved trogons sitting on same branch of pine. Later we perched ^{stop} on 30' stub. One ate 1" grub (?) in top of oak tree. Call: ^{wh} (teebup! - tail raised 30° inches; about notes d-c. In flight, descending notes a b a g f (in 2 sec.), possibly synchronized w. wings. 2 sat 2' apart, one calling (gray breast). Tail tips white spots conspicuous in flight. Sometimes gave slurred whistling rising note, g - ^b, w/o teebup. About 1/2 hr. later, 2 trogons (probably same) perched near our camp, 1/2 mile below ^{first} site. / Saw falcon (peregrine?) flapping over

Journal

Mexico.

16 October 1968

Rancho del Mestizo, S. del Nido, Chih.,
C. variegatus

canyon about 1715, going W. / Yesterday saw rock squirrel near Mestizo headquarters, & near Llano - not hibernating yet, nor chipmunks. In early afternoon, fairly warm, but generally cool all day.

17 October 1968. Cold clear night; a few Strix calls. Prepared specimens.

Then hiked up ^{canyon} ~~camp~~ and to cabana in Mestizo ~~canyon~~ ^(average Mestizo); left 12 30. / About 1 mile upstream met 3 leaved trogons, calling, in pines and other trees canyon bottom, open vegetation. At least 2 or 3. / Soon flushed a juv. Accipiter near trail. Chipmunk near old sawmill site (2 mi. from camp). / Mod. crop oaks (c. 6/eq. ft.) under white oaks. We walked on E. past mouth of Ojito (to N.) and up logging road to near crest. E. edge crest 1440. Started down ridge to SE toward cabin. Entered stand of piñon w. good nut crop, many opened nuts on ground. Saw several Clarke nutcrackers in piñons, and Jim Ellis collected one (very fat; prob. juv. 07). New bird for Sierra del Nido list! / We came upon a juv. Cytotoxicus perched atop a 1' rock on grassy slope; Ellis shot it. As we rushed forward, about 12 flushed, and later 2 and 2 - not sure which were adults. / Reached cabin at 1710, 5 1/2 mi. from camp on pedometer; 7300' indicated elev. Saw 2 single bats about 7 p.m. Heard Strix calling across canyon. (S. Herman had seen Blauvidium about 5 p.m.) Clear, cold night.

18 October 1968. Turkey calls (no gobbles) down canyon in morning. 3 parrots flew over cliffs opposite. At 0830 I left for Ojide la Yegua. Walked past old MVZ campsite - ^{stream} ~~river~~ running well. Under one pine (fascicles of 3, 5" needles; under with stubby spines) about 50 cones of green cones, freshly eaten (Sciurus). 0905, about 1 mile E. of cabin, apparent beaver dropping perhaps 2 yrs. old. Block matrix, loose, full of cones & shells; about 6" x 12" (later photos). This 15 yds. from stream on old logging road. / 0935, 2 mi. from cabin, 100+ small oaks on E. side stream below cliffs (leaves yellow now). Fair nut crop under white oaks (leaves yellowing, browning, dropping). / 1000, 2 3/4 mi., out onto 100+ yd. grassy

Journal

México

18 October 1968.Mesteño Canyon, Sierra del Nido, Chih.,

"sawmill flat." Many old boards in grass, and 100+ of these pushed aside or turned over recently, since plant growth stopped - bear? Took L. fork to hunt along water spout. I took canyon to R. Flushed covey of half grown *Cyrtonyx* in grass near bottom. About 10 juvs. Ad. ♂ + ♀ stayed on ground; ♂ came toward me on log, wings lowered & fluttering. A "bubble bubble-bunting" call repeated. ♀ walked away, & ♂ flew to catch up. Explored upper dry streambed, then next to W. Flushed bandtailed pigeon from nest with 1 egg! Found a bear dropping - 3 pieces, well-formed, $1\frac{3}{4}'' \times 3\frac{1}{2}''$, mostly manzanita berries (+ twigs, leaves) plus other large seeds. 4 juv. (yellow pro. bills) *aphelocoma* chirped in pine close to me. Saw 1 chipmunk (no hibernation yet). Back to ^{hunt} stub (1212) and took fork to W, where poor trail. After 10 min, water in streambed. Cut edge trail to W. toward cliffs + trees and arrived at Ojo de la Jague (1227). It was a 10' diameter \odot trough of clear water, by a 20' "canoa" for feed. Big oaks + ash near. Abundant deer tracks in mud, but none of stags or bears. Steller jays, gopher burrows, bandtailed, woodrats (rodents). Foggy day slope for 100+ yds., + trail leading N. toward divide. Mod. crop acorns on big live oak (3" ovate leaves, undulant margins; acorn nests purple). 1255, started back to cabin. 1330, sawmill flat - then through closed canyon. Some "blue ash" had heavy crop small acorns beneath. Arrived cabin 1500 - 3.5 mi. from ojo on pedestrian. During day, Herman and Ellis saw goshawk with squirrel prey in Mesteño canyon. A few rock squirrels active. Set up bat net near cabin and saw a bat near. Found no bats in attic by day (but one in main room evening.)

19 October 1968. Cool clear night; no frost. A group of 19 parrots flew, calling, over cliffs opposite cabin; about half landed atop rocky parapet. Nutcracker called loudly near cabin. We departed for Llano. First walked about $\frac{1}{2}$ mile S, then up canyon to NW (cliffy sides) to top, arriving 0930, 2.3 mi. from cabin (This ridge continues with Mesa de los Venados to N.). Sawmill flat (of A. del Alamo)

Journal

Mexico

19 October 1968.

To Lloron, A. del Alamo, S. del Nido, Chihuahua,

here 285°. Departed summit 0950-15 min. to canyon bottom, then 45 to summit flat. / Near mouth Ojito, a group of 10 (or+) turkeys walked across trail to go ahead of me, showing no alarm. At least 8 were uniform size & appearance, probably juveniles. None of leading few was exceptionally large, a ^{different} ~~def~~ or probably no gobbler present. Perhaps had come from water in Ojito. No calls. They continued upslope. Saw *Aphelocoma*, canyon wren, y.-b. sapsucker on way back to Lloron. Arrived 1140. Could walk this route from cabin in 3 hrs. with packs. / 5/10 cumulus clouds; light breeze. / We cleaned up, prepared specimens.

20 October 1968. Sunday. Prepared to leave Lloron. Drove 5 mi. down road to (fr. - father did mostly) about 25 yrs.?

Adolfo. Urbano Zea was there, & we talked with him. They had had ranch about 18 yrs. Had given 2 logging permits. Had to divide ranch because of "agrarians"; & had to give 250 ad. & ~~some~~ ^{some}, but now expected clear title soon. He had been to college in U.S. (at Los Cruces?) and studied some wildlife conservation. Armando Regal is his father in law. They have been unable to borrow money on the ranch because lacked final title, but could borrow on cattle. / Poachers a problem as is insufficient men to patrol, but try to protect game. They allow a Mennonite friend to shoot a turkey or two occasionally; he ^{was} ~~was~~ there recently (turkey season opens Jan. 1, I think). He thought the area of Calaña + to N. the best for game in S. del Nido. / When bear poison put out (6'?), Lucio (pre-^{grizzly} [actually brother of Lucio] ^{known} out foreman at Parapetos) had seen the ~~bear~~, but was afraid to shoot it. Zea has of more shot than or later. / Zea showed us 5 skins of puma and 3 of wolf from the ranch, all w. heads mounted on skins. He thought these very valuable. He had photo of Josiah Garcia with grizzly shot in C. de la Madre 10/23/1957. Handwritten on fore was: 329 kg. 220 large, 225 cintura, 27 cm I mano 9 cm. uñas. / Zea seemed willing to let me use all facilities of the ranch. Apparently he would spend most time in puerto at the leather store. / We drove on to Corral de Bueño & stopped at "51" store. Then on to head of Santa

Guis 2/7

Lloron to Mestizo Lajas.

Lloron 0

② Lough 1

Flat to L; road to R 1.4

Red rocks, W. 2.4

Pond 3.3

Rash 4.4

Yea cattley g. 0

Pond, E. 2.6 mi.

Lake, W 4.3

leave road 5.2

Cattley. 8.4

Sharp L turn 9.2 (in bottom, near presa dam)

uphill to E. 9.5

Canal de Barrón 10.2

Cattley. 13.0

Creek 15.1

"51" Stn 16.3

Turn S 18.8

Turn E 24.9

Primavera 43.7

Adogee 49.9

Cattley. 51.8

La Parrita 54.4 (from Yea cattley.)

Journal

20 October 1968.

to Santa Clara Canyon, S. del Nido, Chihuahua.

Clara Canyon & camped. Near Corral de B. saw Marsh Hawk. Soon after we camped a pickup stopped near us; the man asked if we were hunters; it was his ranch, Manta Negra, we were camped on. It was Sr. Cooley, & he knew of my work here & we parted friendly (deer season opened about a week ago). He knew of no bears on his ranch, but thought Canyon de los Prietos a good possibility.

21 October 1968. Near camp saw chipmunk, ^{yellow-l.} sapsucker, & collected a few Pers.

myiurus in live traps (for Davis collection). Then drove down canyon. Occasional jays. Just above Primavera saw a Pyrruloxia in bushes in dry area, ^{Brown} ~~tambien~~ common that area. Drove on to about 5 mi. short of La Parita & collected small

fish in Canyon Occuro. Then drove on to gate to La Providencia. (Jim went to El Surco for gasoline.) In brush here saw black-throated sparrow and other birds, mockingbirds, shrikes, marsh hawks. Drove on to Providencia Lodge, then toward R. del Nido Lodge. Saw 3 marsh hawks, sparrow hawk, morning dove, meadow lark, lark sparrow, scaled quail, & others. (Herman shot a scaled quail weighing only 76 gm.) Quail now in coverys in grass among branched cacti.

We drove on W. to C. de la Madera ~~en route~~. Along road frequently saw large Dipodomys (prob. spectabilis). A juv. Bubo landed on road in front of car repeatedly, flying only 100-200' each time, & allowing car to approach within a few feet. / Met Julio Loquette, who owns ranch. He was eager to show us

a dam, & they had built several. He wanted to introduce other kinds of animals, and I tried to discourage him. He wanted to poison rodents, kill coyotes.

But friendly & talkative (in English), & offered full cooperation of ^{ranch} facilities. He, too, was strong on keeping hunters out. He liked wildlife and wanted to encourage it. He said a herd of about 18 Antilocapra in zone to N. of La Providencia Lodge. / Herman caught big Dip. in live trap by road.

22 October 1968. Cool, clear, calm night. We walked up C. de la Madera to water

pila. Road badly washed & probably impassable to cars. We went up the

(going N)

"Km. 92" La Parita 0

Old restaurant, K108 4.1 mi.

Tram R 5.2 (Km 176 1/2)

Km 176 9 7.5

blw gate h 8.6

Provid. cattleg. 10.8 (= Km 177 1/2)


From here; gate 32.8 mi.;
saw ranch by. 7.1 mi.

From ranch, pipe gate - ; cattleg. 5.1 mi.; ^{III}wood gate, 9.4 mi.
(then turn S. toward El Nido by the.)

Journal

22 October 1968

C. de la Madera, S. del Nido, Chihuahua, Mex.

W. canyon where bear sign abundant in August, but found no fresh sign. The old droppings now flat, + ^{some} seeds (river) were seedlings. Spots of water in this tributary; no water in main Madera canyon. In side canyon near bottom I flushed 12± Montezuma quail. / Then I went about 1 hr. up main canyon to search for bear sign. Rather lifeless now, but madrone berries ripe + common; acorns on ground few. Usual Aphelocomas, Cyanocitta, + Pipilo. Mostly short elongate leaf oak , whitish beneath. / About 300 yds. S. of the pile, flushed 10± Montezuma quail; all flew ^{at once}, + apparently all ^{full grown} ~~mature~~. No hummingbirds. Few flycatchers. Some vireos, warblers, juncos. Drove back to foot Cañon del Nido + camped.

23 October 1968.

Cool, clear, calm night. Coyote chorus. Unrecognized owl call. Herman trapped a Dipodomys nearby. Departed early for Prádena Idgts., to see antelope. Fortino sent Manuel Moya (sp?) with us; he said he had seen two small groups 2 days ago, & recently men at camp near house had seen them. Moya said he saw 2 with 2 kids. We drove toward "Las Indias" and found none in 3/4 hr. Moya said for farther S., in canyon, he always saw them - quit for lack of time. Rest branch of this road went to a reservoir at La Terera (sp?); Moya said 6" fish + axolotls there. We saw several ducks in small presa we passed. Cliff topped conspicuous isolated hill or plain called Cerro Chileno - Herman thought it likely place for falcons. Moya had great interest in animals + hunting, but said no bears on that end of ranch. He had heard that Ciprésia, a vaquero, had seen track near La Fresca a few days ago. Fortino, like others, thought that we planned to bring bears in if we found none. / Herman + Ellis left for Juarez and Davis, taking bird skins, live mammals in traps, & some lizards in formalin. / I drove to Rancho del Nido. Road washed out below house, so detour needed. At ranch no one except 2 vaqueros. Ciprésia said the bear track was a single one and did not have long claws. He had

Journal

Mexico

23 October 1968. (Wed.)

Rancho de/Nido, S. del Nido, Chih.

seen no other sign bears since my previous visit, but thought they were in high canyons near the summit rim. He said in canyon to L. going toward summit peak (via El Teridero) were caves where bears slept. Camacho, the best guide, had left ranch & was working in mine on Rincon del Alamo. (No women or children here now; just the 2 men.) / I drove 1/2 mile up @ Las Varas & camped at foot Higuera tributary. No water in either stream. But occasional pools in lower del Nido canyon (1/2 mile above Laasca). One sand in bottom, at hot time of day, I saw snake tracks & followed them to a boulder, beneath which was a Crotalus molossus. No stomach empty. This is first rattler I have seen this month. Like others, rather dopey, but struck repeatedly at stick. Acorn crop very good in lower canyon. But much drier than in mid-August. Citellus variegatus & Eutamias amoenus. / Yesterday, about noon, 200 yds. W. of La Banderita headquarters, I saw a prairie falcon dive at a mature Cooper hatch. Saw 2 marsh hawks on ground by a prairie.

24 October 1968. Thurs. Cold clear night. 1 Peromyscus in 5 live traps set; she was pregnant (CKK 3024). Departed up Higuera Canyon at 0815.

Creek dry for 50 min; where branch entered from W.; then some running water. 0920, I found old but formed bear droppings containing seeds & fruit. About 50' from stream on flat among oaks. 0955, 6300' ind. alt., 4 mi. on pedometer, another bear dropping consisting mainly of twisted plant (base of grass?) fibers, & some acorns (fungus on; not fresh). 1030, 3.3 mi., 6600' i. a., turned SW (near cliffs to S). Many Mexican jays; gpr. 6-10 w. yellow base bill. No water in this area. Found many acorns eaten by Sciurus under yellow pines. Went short way up branch to S, (CKK No. 3029) then up main canyon to 1315, 7100', pedom. 9.0 mi. Shot a y.-b. sapsucker. / Sciurus - in shady canyon bottom, one jumped from 20' up in oak to pine trunk & ran up. I fired, and another jumped, horizontally, to ground

Journal

24 October 1968

Higuera Canyon, R. del Nido, Chihuahua, Mexico:

from the oak, & soon are left down from lowest branch (25') of the pine. They ran off in the brush. More cone cover here than anywhere I have been in R. del Nido! Flushed bandtailed pigeon from nest with a large pin-feathered young. Late breeding! Nest only 5' up in small oak. Much evidence heavy washing in canyon, & a recent slide about 100 x 50 yds., completely baring ground, to S. near terminal point of hike. At about 7000' I saw that a rock had been moved; searched flat nearby & found pile of droppings, beaver, fairly fresh (2 wh.?). Mostly manzanita leaves; no hair apparent. Later flushed a Sciurus on ground under Carotus bush; along its flight path I found a tuft of plant filices, like thistle down. Took a mt. Peromyscus from under a boulder; it had gone down hole by large clump grass (CHK 3828). (Kept alive & photoed.) About 1510 I was again heading N. down main canyon. Saw Odontomys on slope. Saw no quail. Reached camp 1710, checking 19.6 on pedimeter. [ped. set at 30"; note high on rough ground]

25 October 1968. Fri. Cool clear night. Departed 0830 up C. Las Varas, which had ascended in August. Dry until about 1 mi. from camp; then running water, about 3' wide, w. pools large enough to swim. As before, cattle w. manure as they ran ahead up narrow canyon, at first 4-5, later 12 or so. about 1 hr. out, ~~streamed~~ ^{streambed} dry; later ran again for 1/2 hr, then stopped. Shot juv. Cooper hawk in pine (discarded). about 1100, canyon narrowed & bottom looked better for beaver; lost cattle, the tracks abundant. About 6400' here, 10 mi. on pedimeter. Conifers, oaks, shrubs in bottom. Occasional pine straight spruce (cone mature & open). By 1200, more open & dry (end of August trip), & at 1210 reached barbed wire fence, ^{Ej. Las Varas} boundary of Monte Negro. 10 min. farther S. to good running water. Many lizards out on rocks. about 6500', still on ped. 12.6 mi., I turned back N. On way shot a bridled titmouse, the first I have seen here. Chichadees fairly common. Mixed flocks small birds moving rapidly through canopy. (CHK 3826) Shot a juv. sharpshin hawk near bottom. Flushed 10+ quail

Journal

25 October 1968

C. las Varas, P. de l Nido, Chihuahua, Mexico

(*Cytomys*), including no obvious adult ♂ or ♀. All full grown & all went at once. Later, about 2 mi. above camp, heard quail calls, whistling J J^b ; imitated whistle & a juv. came atop a boulder near me. / Back at camp 1730 having clocked 26.6 on pedometer. Set no traps. Warmer this evening.

26 October 1968 Sat. Prep. specimens & moved camp 1.3 miles up C. de Nido

(from Las Varas fork), to location by "keyhole" cliffs. Departed 1435 for hike to summit & overnight stay there. 1515, reached stone hut - essentially end of jeep road up El Tiadero. Water for 10 min. beyond (6400' ind. el.). Caprine scrub crops on ground in lower canyon. 1600, 6900', 3.7 mi. pedometer, a canyon w. evidence high water, boulders, log jams, entered from W. Main canyon must have had wall to wall (100') flood; trail completely gone in many sections. Washed sand good for tracks, but none of wolf, lion, bear. 1735, reached rim on trail. 8000' ft., 6.5 mi. from camp. Pleasant little stand pine here, & a large beaver dropping. Litter mainly manzanita (abundant in vicinity), and seemed to have several dropping (darker, finer texture) atop first, as if from successive deposits. Perhaps only a few days old. No hair apparent in it. / Camped nearby; clear night but not cold, intermittent light breeze. Wispers cirrus clouds eve, (& next morning). No owls or coyote heard. Several acres low manzanita here, some with many sweet brown berries attached.

27 October 1968 Sun. Cirrus haze; light breeze. Departed summit area camp 0815

and went down draw (Mestizo drainage) to SW. Found small pool 1/2 mile down, as in July.

Continued down this canyon to jet. with another branch (the one where camped in July),

2.5 mi. from camp, 7700' ind. elev. Usual Steller jays, junco, scrub woodpeckers, small greenish vireo. Aspen and ash yellow; some of former leafless now. Some oaks also yellow & brown-leaved. Water intermittent in bottom. By one pool,

tracks deer and apparent wolf; tracks latter several places in loose sand by streambed. 0945, 3.4 mi., where creekbed dry for a few hundred yards, a

Journal

27 October 1968.

Upper Mestizo R., S. de (Nido), Chih., Mexico

Ursus dropping in center streambed. Formed, black, with many acorn shells.
 (First dropping found crushed; previously, mostly on nearly flats.) $\frac{1}{4}$ mile
 beyond, on narrow foot trail on slope, 50 yds. from stream, a similar ^{bear} dropping
 w. acorns. Plastic & damp; days? old. Nearly ash fine & dense, with
 acorns rare beneath - so may mean bear came up from below. 1025, 4.3 mi.,
 another pile, w. acorns, in rocky streambed. Again damp, but moisture settled.
 And another 50' S. in dry creek bottom. Another 100' on, + another 100 yds. on.
 Last included mangonita mainly, w. fresh green leaves + some green berries (collected;
 photo'd 2 droppings in situ). Adjacent area mainly low ash brush, but mangonita
 500 yds. upslope. 1100, 5.7 mi., 7400' alt., another of mangonita in creekbed; a
 small black dropping, as of fox, atop it. Mod. dry, but included green mangonita
 leaves. ^{williamson} (coll. 3830) ^{creeping} (coll. 3831) ^{red-tailed hawk} in canyon. 1115, another dropping
 w. acorns, same color (about 2"), 30 yds. from dry streambed. And 1120 another,
 on faint trail in ^{tall} grass 100' from stream - this one contained both acorns + mangonita.
 About 16" of dropping, over 2" diam. 1130, 5.75 mi., came to the flat w. old timber,
 prob. remains old savannah. A branch canyon leads NW (rock turns to SW). Some
 water pools here. ^[Later heard shot to W.; heard hunter were at calaña area.] Found dead Crotalus w. head cut off (hunter's work?). Kept on to
 1200, where steep dry canyon leads ENE + Mestizo narrows + turns SW. (6.3 mi.,
 7300'). A weak trail starts up w. bank + seems to lead toward Ojo de la Yguera
 area. 1215, started back N., slowly, near streambed, searching for tracks. 1315,
 in wet sand by pools, 3 bear tracks in fair condition. Claws about 1-2
 cm., and one hindfoot measured about 5" wide by 9" long. ^{obviously} Also made since
 last rain; perhaps within a day. 1435, about 5 miles on backtrail, came to
 branch where descended & this time took W. fork (by old diversion). Continued
 up to rim (1515, 7900'). Then toward camp across sidehill on N. side
 rim - the long way around. Reached camp 1700. 15.7 mi. on pedometer.
 [Took Peromyscus, coll. no. 3832]
 Camped same spot; set 1 snap trap near rocks + brush. All other signs

 many
 bear
 droppings

Journal

20 October 1968

To Rancho "El Nido", Chihuahua, Mexico

Departed 0830 for hike to summit along rim. Arrived 0945; 2 1/4 mi. by pedometer. No bear sign en route. Summit is in line with the band of trees ~~across~~ ^{across} plain from R. el Nido, about 028°. At top, Breusdingia, sugar pine, yellow pine, oak shrubs, bunch grass. Hd. of Alamo drainage to SE of summit, about 2 mi. Returned to summit camp (1110). Found dried carcass of Odocoileus spike in velvet; well-eaten. Descended El Teradero. Saw Odocoileus + "spike", standing at 50 m., 1315, near big wash from W. Stone hut 1400, + on to "keyhole" camp. Vagueros, Rodriguez, dropped by. He had been here a year + had seen bear tracks in Los Varas + El Nido canyons, but had never seen a bear (nor Espinosa, the other vagueros).

29 October 1968. Departed 0900 for La Providencia, where talked with Fortis. Collected a snake along road (CHK no. 3834) and a shrike (CHK no. 3833).

Then on to Chihuahua, where talked with Don Gilberto Musquiza. He has received donation of fence wire to keep deer on his ranch W. of Chihuahua. (Received copy of the Texas whitetail monograph (Jim Teer, et al) for him, + one on scaled quail for José Damian. Talked with last in affil. He said ^{Delator} Delator (sp?), jefe of the delegación in Juárez, had released 3 or 4 black bears on rancho Manta Negra; also that Crosby had later seen them (?) near ranchhouse (released near). I explained dangers of releasing ^{alien} bears where there were already native bears to Damian. He seemed to understand, but wanted written statement from me, as he felt he had no influence. (Apparently Fernando Hernández Congo favored the release.) Shopped, + drove back to La Parita; camped.

30 October 1968. Wed. Drove up Santa Clara road to tienda 51 and on to Rancho Mestizo. (Met Juan B. en route; he said some Americans, hunting, were at the cabana. Also said about 4 years ago a bear trapped up canyon from Eloran; he said it was "muy bruta" and he thought it a "plateado." (He will try to locate the "cuerpo.") Citellus still out along Santa Clara Canyon road.

Sp. of 6 scrub jays ^{may. or scrub} on site near oak. 16.2 mi. from ^{first} cattle guard W. of La Parita

Journal

30 October 1968

To Rancho "El Mestizo", S. del Nido, Chib., Mexico

to edge plain (cattle guard) at top. From there to Coral de Baños, 28 miles. Visited Raynal ranch briefly; Armando (dueño) expected Saturday. In bottom to W. of C. de Baños, found dried carcass of Ardea herodias, & saved skull only. Going toward Mestizo ranch, grass still green in local 3-4". Coral to Mestizo cattle guard, 10 miles. / Saw no ^{Citellus} Spilosoma nor Lepus along the road! Also all C. spilosoma on plains of Providencea were gone, & mounds covered with weeds (saw only 1 animal in several crossings). Lack of Lepus due to high grass? (saw a few at night, mid-October). To ranch by air. & up to Lloron, then on 1 1/2 miles on unimproved road. Hurt my back throwing boulders off road, so camped about 1/4 mile short of Sawmill flat (where would have had much better morning sun, & a water hole). Clear, calm, cold evening.

31 October 1968. Frost last night, & trucker frozen; coldest yet. Tried hike (CBK no. 3835)

but back too sore. Collected Cardellina warblers near sawmill flat, where saw them last summer. Day clear, mod. breeze. So saw at least 3 Eutamias in 1/2 hr. in sawmill area. Set 5 live traps canyon bottom in oaks, logs, rocks.

1 November 1968. Frosty morning. Traps held 3 Peromyscus (nos. 3838, 3839).

Back still painful, but could walk slowly. Went up Arroyo del Alamo. Saw 3 chipmunks, 1 Citellus sp., jays, r-s trogons, 2 kinds juncos, acorn woodpeckers, bluebirds, robins, bandtailed pigeons - last in flock to 20, but occasionally flushed singly from trees. Took W. branch at head canyon & misty gited manganita area. Berries abundant - 50/sq. ft. on ground under some bushes - and sweet; many acres of fairly open stand, with junipers (many fruits) mixed. But found no bear sign. Found head old road down to C. de las Animas (1230). Did not descend, but went E. on mesa to the presa. 2 ravens. No bear but many deer tracks around reservoir, and at head of pool below, large tracks on of turkey or Cathartes. This presa at head Ojito draw. Descended this & found pool halfway

Mileages m. La Paruta

For scale on maps.

N to S,

↓ House to W. 0.0

————— 6 mi. —————

Blue restaurant (2 bldg) ~~4.7 mi.~~ .6

La P. (km 92) 4.7 mi.

Restaurant km 91 ~~6~~ 5.3 mi.

Arco Iris - stream h 7.6 mi.

Rancho Exp. sign 11.5 mi.

La P. to Chihuahua (overhead green signs) 56.5 mi.

(turn in to SW)

Providenceia houses to green gate at R. El Nido, 9.4 mi.

Going W - " " to Pajarito gate, 2.7 mi.

Journal

Mexico.

1 November 1968

Arroyo del Hams, S. del Nido, Chihuahua.

down. Call. canyon wren in bottom (no. 3837). Closed back canyon bottom with boulders, large ^{live} oaks. Returned to camp.

2 November 1968. Heavy frost. Back pain moderate. Departed 0915 w. minimal gear and ascended to Mesa de los Venados via trail to NW of sawmill. Jumped a fine buck in oak-grass area. Rabbits in ripe madroño. Reached the presa 1020. Saw w-b nuthatch. Calm & clear (but always some haze). At hump in NE corner mesa 1055 (3.0 mi. petometer). Then to pass above Ojo de los Venados, where found a recent dropping of bear, containing acorn shells & manzanilla seeds (photo). On ^{ridge} trail within 50 yds. of east pass - bears seem to prefer same route as humans; bottom, track, edge mesa, pass. Continued E. atop divide (new ground for me). ascended to fine ungrazed bunchgrass gentle slope w. open stand yellow & (Hairy woodpecker seen.) sugar pine; about 10 acre mesa; few weeds. Down to a pass (could see roof of Bear cabin to S.), up to knoll of low oak brush, down to pass. There found bear dropping, probably weeks old, all manzanita. Up another hump & down, then over rocky narrow peak, down to pass, & up final ascent to flattish top of Alto Mestero. This mesa had been logged; bunchgrass & low oak brush mostly gone. Inaccessible to livestock. Many small diggings as of shunks. Grand view of plains & hills to N., & could see half of Laguna Encinilla. Probably about 9000'. Top reached 1330, 7.5 mi. from camp. 1350, started down to N. into A. de las Animas - steep, dry, open stand 50-100' conifers, & unlogged. Worked downstream near bottom. About 1500 water commenced, intermittent pools. 1520, found bear dropping on each side streambed near aspens. One blocky, w. acorn shells. Other also included manzanita & dry grasses. Both moldy but well formed. Soft ground for tracks rare. Ash, oaks, bunchgrass benches, small willows near streambed. By (Pygmy nuthatch in conifers.) 4 p.m., stream running fairly continuously; fragments of built trail. Rare sign grazing. In wet sand found fresh tracks - probably Felis or Lynx.

Journal

Mexico

2 November 1968

A. de las Animas, S. de Nido, Chihuahua,

1630, water stopped. 1700, opposite E. end of central ridge dividing N + S branches canyon (S. one more direct to hd. C. de la Madera, & perhaps better for bears). Some fair stands aspen, beautifully clear yellow row. Apparently had missed trail up, so started angling up to S. toward mesa. Took 70 min. of puffing to arrive - 1000' up? Dropped into head of A. de las Animas after dark, & heard Bubo calling. Moon about 1 day short of full. Rented camp 1930.

3 November 1968. Sunday. Cleanup day. Coll. w. L. Muthstich. 3 cowboys came by; questioned, one said he saw bear track in lower A. de las Animas yesterday; another added, wolf and lion too. Moved camp. 4 mi. downstream, where longer sunshine & head of water in creek. This at foot of trail going over hill to NW. to lower A. de las Animas. I walked this trail 3/4 hr. Barbed wire fence on first (low) ridge. Drier on lower Animas side, & basically juniper - piñon - manzanita. Dozens acres of manzanita, much w. drying berries, & many fox scats near there. (This is general area where saw wolf in July.) Returned to camp. Collected a few plant specimens. Clear calm night w. full moon.

4 November 1968. Monday. To Arroyo de las Animas. Departed camp 0750 and walked NW over hump and down to bottom of A. de las Animas. At tributary junction 0910, 3.9 mi., 7100' (camp 7400). Bottom is boulder stream wash - tributaries dry flanked by grassy benches, pines, blue oak, live oak, juniper, ash. Many cattle tracks & droppings (the cattle elsewhere now). Below junction, running water, and flood plain 50 yds. wide betw. cliff walls. "Navajo" rock pillars & formations. Good trail up bottom of main canyon, & water. Groups of chirping Mexican jays, many with partly yellow bills. One short-tailed grayish jiv. which could hardly fly - late breeding! Occasional sandy spots, but no bear tracks. About 2 mi. upstream, water stopped. 3.3 up, tributary (dry) entered from S. Streambed mainly too rocky for tracks. Constantly searched for bear droppings but found none. About 5 miles up, running water, & 5.6 mi. (estimated),

22

Journal

4 November 1968

México
A. de las Animas 5. del Nido, Chihuahua,

1040, came to half fallen board cabin, covered feed trough, on grassy (grama knee high) flat. Beyond, 4 old log cabin remains. Chabacherry brush. Streambed ave. 6' wide. Yellowing willow brush. Water for about 1 mile farther, opposite cliff with 12± caves (to 5). Cirro-stratus clouds today; 9/10. Occasional cone cones on ground (Scirpus). A wolf-sized dropping, including deer(?) hair, was nearly white tho fairly fresh; why are some white? - dog smell. 1125, 7.8 mi. upstream, arrived at fork (that I had reached from above on 2 Nov.); 7300'. Aspen started here. Went up the N. fork (nearest head of C. de la Madera). Now flushed 12 Cyrtornis - all froze first on in grass, but visible; then all flew at once together, giving --- call. Saw Odocoileus doe, yling, fawn together. 1150, flushed another covey Cyrtornis, including at least 1 adult ♂; usual "bubble breaking" call on flew. 50 yds or, flushed 2 juvs, then 3 w. ad. ♂ - doubtless some coveys. These in bunchgrass in canyon bottom. Water spotty here; running 2' wide stream farther up. This fork rather narrow & steep sided. I continued on in bottom for 1.8 mi. above fork (13.5 from camp), at 7400'. Landed & returned downstream, leaving 1245, ^{meandering} ~~meandering~~ to look for bear sign on way - but found none. This time 8, junction 2.2 mi.; cabin about 2.1 farther, lower jet. 7.8 below upper, + 15 mi. to camp. In ascending slope thru blue oak - many-
anita - pinyon - juniper area, flushed 10± Cyrtornis, again including an adult male. Three coveys seen today; all members fly well. On this slope I also found a big Neotoma nest under a 6' boulder. The sticks, bark, & cattle droppings were stacked up on all sides so as to fill gap between ground and edges of rock. This is only such nest I have seen here so far. Pedometer is set at 30"; may be 15% different in going & coming same route; reads highest when ground rough & steps short; may be 25% high at times, but more reliable than watch for distance, as does not include stops. Saw 2 apparent wolf droppings during day (one included bone fragments), and one set apparent tracks in loose dry sand streambed. But no bear sign.

Journal

5 November 1968

Rancho El Mesquite, S. de Nido, Chihuahua, Mexico

ad. (No. 3841)

Clear night, frosty morning. 1 Peromyscus in 4 live traps set last eve near stream and boulders; 1 juv. too, dead & discarded. Drove down to ranch headquarters, collecting grass specimens on way. Talked with Juan Baeyza. He was not here when bear killed 16 \pm head stock (but here 7 yrs.), but thought it was on Mesa de las Ventanas. No bear actually known killed there. First four years he saw no bears; then 4 yrs. ago, when natural food crops good, about this time year, bears and sign common. Some trapped; some poison put out then, including "palominos" costing one Baeyza thought possible grizzly. He recounted having trapped one, using deer entrails as bait. Another time he put out pieces of dead cow poisoned with 1000, or so, for a wolf; but baits all eaten up by bears. But no bears reported found dead. He thought none on ranch had seen a bear since 4 years ago. He told of one time when Roman Priests offered reward of 500 pesos for a bear (probably black) which was killing cattle. One man tried to trap it and the bear carried off his trap and drag, but was not found. He told story of a black bear which killed ^{several (full grown cows)} cattle, and other times when manner of killing did not suggest wolf (breaks hind legs) or lion (which attacks shoulder), but attacked chest of cow. Apparently he had never seen a grizzly dead or alive (except possibly the trapped "palominos"). I drove on road from headquarters N. to A. las Animas, 3 miles. There talked with 2 men at adobe hut. One had big rifle, & there were remains of 3 or 4 deer on ground, a dead ^(trapped) coyote on fence. Hunter said he had trapped wildcat recently too. He said he had been here 7 months & had walked about a lot but had not seen any bear tracks or droppings, no turkeys, rare tracks lion and wolf, but seemed to know the common animals, gophers and porcupines, but no mopeche. I drove about 1 mile up canyon. Bottom flat & wide, with pines, oaks, brush. Water spotty in streambed. Returning to ranch, saw marsh banks, & near headquarters adult Cooper hawk circling above. Again talked w. Baeyza, then drove to cattle yard

Journal

Mexico

5 November 1968.Rancho El Mestizo, S. de I. Ndo, Chihuahua,

at ranch entrance and about .8 miles W. to gate, where camped. Baiza said several people had been deer hunting lately; a second ^{party} of Americans now at colona; but one had reported seeing a bear. (Sebastien Barrera of R. del Alamo is father of Baiza's wife.)

6 November 1968. Cool clear calm morning. Drove down road collecting grasses. Generally

dry aspect. Visited Rancho Parapator headquarters, then SI store, and drove on to Rancho El Alamo in C. del Alamo to camp. This is about 7 1/2 miles off of main road.
(6900' indicated)

Camped 1/2 mile above ranch house. Road washed out 1/4 mile farther on, + ends 1/2 mile beyond that. Canyon similar to Mestizo below colona. Stream ^{clear} clear and running well.

Walked about 2 miles up C. Escudido, which runs N. starting near ranch house; spotty water, no bear sign.

7 November 1968. Clear frosty morning. Departed camp 0800 and walked up stream.

About 2 mi., barbed wire fence + tributary to N. 4 mi., dry branch goes E, main canyon to N. Boulders bottom, cliffs side, series of oaks on flood plain, + rather shady bottom.

No cattle now, but horse tracks. 0940, 5.2 mi. ^{to bottom} (redrawn) from camp, 7100', a main fork, one branch going N., one E., both w. water. I took N. fork. Big pile sawmill scraps, + rock structure (sawmill site). A mile up this fork, remains log cabin. Thin ^{on stream bench} grass (grama) very thick + cushion-like mat, no space uncovered, ungrazed. Canyon ^{widens} became wider, drier, more open, w. blue oaks + small yellow pines. From grass + brush on flat, flushed big covey (15+) of *Cyrtonyx*. All flew at once, but scattered in direction. Water stopped about here. About 3 mi. up fork, one *Odontion* ran; then wheeled soil timer from slope. 4 mi. up fork, tributary canyon to N, NE, E. Went up E branch, with widest streambed (dry; 10' wide). 1/2 mile up, bear droppings in open, 100' from streambed; dry, slightly moldy, apparently all manzanita. Later found another nearby, 30' from streambed on rock + grass bench. Went on to a mile, where canyon narrowed. Then returned to mouth and went up NE fork (starting 12.2 mi.), which was dry, in 100' yd. wide bottom.

Flushed covey of *Cyrtonyx*, including 2 adult males. They went a few at

Journal

7 November 1968

México
Cañon del Alamo, S. de N. de Chihuahua,

a time about 50' from me. This ^{on} open bunchgrass & pine needle ground, 1 mile up (NE fork of N fork) old bear dropping of manzanita; half formal still. On pine needles, 100' from stream bed. 1225, 1.6 mi. up this branch, came to running water, clear, 2' wide. Went on, 3 mi. (about 12 mi. ^{2 mi. up fork,} from camp), where saw high conifer ridges to N. Then turned back. Near (1/2 mile up) mouth this fork, dry manzanita-filled bear dropping; 50' from stream bed on grass & needle flat. Back near the sawmill flat, an apparent but small bear dropping - black, w. acorn shells, but only 1" diameter; on grass under oaks near stream. Continued on to camp, arriving 1610, w. 25.2 mi. on pedometer. / Most of canyons have old trails, wide, apparently used for logging. Almost no signs grazing more than a few miles up canyon from camp, the horsetader (to Mesteno?). Areas explored today are just over ridge to E. of Mesteno canyon above colada. No tracks seen. / Took one Peromyscus this morn in 5 live traps set among boulders on dry (S aspect) slope near camp. R. C. del Alamo

8 November 1968. Fri. Cold wind, & alto-cumulus 9/10. Talked w. Sebastian Barrera

He said that a grizzly (big tracks) had killed several cattle about 8 yrs ago, and cattle also killed on Manta Negra and Mesteno ranches. Not known that the grizzly was killed. None seen since. In fact, no bears at all seen during last few years. He has known of only 2 bear poisonings on ranch.

[Same as Lopez E. saw?]
One of black bear & cubs about 8 yrs. ago, not far N. of ranch house. One of grizzly & 2 cubs, earlier, to E. He had hunted on ranch with Lopez Escalera but they had found no bears. / Light sprinkle, & started to clear 10 a.m. I set out to N. up C. Escudido, leaving 1015. Went about 3 mi., then into canyon bottom - shady, big oaks, pines, rock walls close; but no water. Occasional flock 10+ vireos; one included titmouse. 1225, 5.3 mi. from camp (pedometer), canyon forked N and NE. I took N. fork to ridge top,



Journal

8 November 1968

C. del Alamo, S. del Norte, Chihuahua

which reached 1310, 6.5 mi. - in sight ^{of} Yea calaña just across canyon to NNW. Man-
zanita on ridge w. berries still; dry but sweet. 30 Odocoileus including fawn. In
thick bunchgrass, covey of quail, 12⁺, w. 2 or 3 ad. ♂♂. 2 flew, + later main gp.
or I tramped thru grass. A juv. ♀ weighed 185 gms. (skinned some in camp). / Caught a racoon moving
fast thru bunchgrass atop ridge. Collected a solitaire; first seen this fall.
Continued partly cloudy, windy. Walked 2 mi. E. on ridge, then (1430) started S. over
the rocky, brushy, dry hills, w. small oaks, tall bunchgrass. / Flushed a
sparrow from grass by bush; it flew 100' + landed. Flushed it again; it flew
100 yds. + landed in grass. No water here, + bird seemed healthy. / Many Spizella
in oaks. Collected a larger sparrow, which froze as I climbed the tree. Then saw one
juv. Aquila gliding up Alamo Canyon above cliffs - first seen this side
of sierra. Camp at 5 p.m. (5.8 mi. on redometer). Clear; wind 5 kts. Cold evening.

Sat,
9 November 1968 Heavy frost, + 2" water frozen in coffee pot. Clear. Cleanup and
prepare specimens. Departed Alamo ranch. 100 m. pond 1/2 mile S. of houses

had 100⁺ ducks including several mallard and pintail ♂♂; most looked
like ♀ mallards or Mexican ducks. / Drove to Parapeto ranch. / Near
windmill on way saw unidentified hawk - shape + flight like Buteo; uniform
dark gray above, light below; under wings near white, bordered in black,
with conspicuous black blotch at wrists ; base tail ^{white} ~~dark~~
with tip a broad band of black . = ? / Don Armamento had not
come, so drove to Mestizo ranch. / Urbano Yea was there and we talked
again about bears. He said the animals killed by grizzly included a \$5000
bull. Also that the grizzly had a regular beat from Canyon del Alamo
to the Santa Clara River. / Hunters now gone, so drove via repaired (some
barely passable spots) road up Mestizo arroyo to Calaña and camped.
Heard Strix calls shortly before reaching cabin. Saw cottontail in
grass by road.

B. lagopus

Journal

10 November 1968

Mexico
A. del Mesteno, S. de (Nido), Chihuahua, a

No frost cabin; slight in canyon bottom. Departed 0810 for upper Mesteno. Lv. 0810. 0910 (4.7 redometer), sawmill flat. Both forks dry. Aspen trees ^{leafless} now ~~leafless~~, apparently frost caused leaf fall. About 10 min. up Mesteno above O. de la Yegua fork, occasional small pool. ~~for~~ rocky bed, bear droppings, acorn hulls mostly, dry, no mold, sweet "hay" smell. 20 min. on, another of acorns, 2 more within 50 yds (one had some manzanita berries), and another pile 50 yds. beyond, all in 40' wide dry streambed. One of finer texture w. manzanita, together w. one of acorns (used twice, diff. times?). Searched loose sand but found no tracks. [There are apparently some droppings seen on trip from del Nido side; no new ones.] Continued on ^{NE} to fork (leading toward summit), 10 40, 6.9 mi., 7700' (7400' ind. elev. at cabin). Then climbed to W. toward Varitar canyon. On ridge, good stand manzanita bushes w. abundant dry sweet berries. Here one recent bear droppings in open on ridgetop (dry; no mold). Crossed ridge to Varitar 1200 (0.8 mi). About 20 kt. N. wind today. 1220, in bottom of tributary [the trib. from lowest pass at head Mesteno] of Varitar, found 2 piles bear droppings 8' apart (dry; not moldy), manzanita content. Then to main bottom, a 6' wide streambed with rare small waterhole. House wrens, juncos, jays, spotted towhees seen. About 1 mile downstream, acorn bear droppings in loose pile, & 50' beyond, another, smaller. In bottom, principal oak is deciduous white oak, small size; no acorns below, but cups prominent under some (nuts eaten?). 1330, farther down streambed, 2 more piles acorn type within 100'; these well formed but dry. Older one, of manzanita, nearby. 1345, another old bear droppings; acorns, & older one of manzanita; both near dry streambed. 1405, start of running water, which continued about 1/2 mile. Dried before ^(w. O. de la Yegua branch) junction, which I reached at 1435. Then dry S. to cabin, which reached at

Journal

México.

10 November 1968

A. del Mestizo, 5 del Nido, Chihuahua, A.

1545. Occasionally tracks large canid, $3\frac{1}{4}$ " across (small wolf?), to near cabin; also same or larger going up Mestizo to E., and droppings also appeared very large for coyote. Coll. spec. 3847-3850 today.

This tour of upper Mestizo & Varitas produced ^{most} ~~more~~ bear droppings seen so far, but apparently route used only occasionally, not daily.

11 November 1968. Again not frosty at cabin. 5 live traps set by cabin produced 3 peromyscus (CBK 3851); still lactating. Collected & prep. bird skins.

Saw Citellus variegatus 12' up in oak tree near large hole. Saw at least 2 chipmunks (no hibernation yet?). Small bird flock included Hutton (?) vireos, titmouse, chickadees, juncos. Kinglets scarce.

A hairy woodpecker hammered noisily at dry mesquite stalk. Flushed 8⁺ Cyrtoneys 50 yds. from cabin. In morning after sunrise, heard gobbling (turkey) about $\frac{1}{4}$ mile N. of cabin, 3 times as if moving rapidly, & about 0900 a gobble from W. of cabin.

12 November 1968. No frost. Tues. Hunted 2 hrs., & prepared specimens.

Saw "sapsucker" w. unmarked sooty back and large white across sides head; subsp. ? / Flushed Columba, which flew sloppily, perched, perhaps distraction display. From where left, 12' up in oak, nest with pin-feathered squab! / Departed cabana afternoon. Ice in shady parts canyon.

Jumped 3 Wilson's snipe in grass below cabin. The old adobe were 1.4 mi. by road from cabin. 1.2 miles further down cabin, I saw 22 turkeys walk across the road from stream up slope. Some larger birds, but last several were about 75% grown. / .7 miles farther on I saw a Cyrtoneys in road; it crouched flat in alarm (CBK no. 3859); $\frac{1}{2}$ acre in crop. About 12 more present, & there ran up slope. / Road left canyon about 4 miles from cabin; cattle guard 7 miles from cabin. Collected 2 birds and camped among oaks on ranch. Not cold; cirrus-strewn overcast.

Journal

13 November 1968

Rio Santa Clara, Chihuahua, Mexico, 6500'

Talked w. Juan Baiza & said goodbye. He said José Belito of Ortega had a skin of bear trapped on ranch 4 yrs. ago. I drove 9 miles S. from cattle-guard; then instead of turning ^(at press) up to E. toward Corral de Baniar, I turned W. toward Rio Santa Clara. Frequent horned larks on road, meadow larks common, 3 redtails, several sparrow hawks, & flocks 100+ sparrows (white ant tail feathers), ravens. 5 miles beyond turn, then cattle guard, & Ortega ~~side~~ lay about 1 mile W. river. A poor small adobe town. Belito a rugged campesino type. He no longer had the cuero, but said it weighed about 90 lbs. gutted, had scars about 1", shotish "lava" being black dorsally and "colored" on sides; doubtless black bear. He had trapped one in upper Las Animas, another in upper Mesterio. He also mentioned someone killing one in canyon W. of C. de la Madera, and said 3 (one large) poached summer of last year on ranch of David Prieto, to N. Also he described something that had puzzled me; on some pines in upper Mesterio & Las Animas, occasional tree is blazed w. axe and the cut wood drilled w. hole about 3/4" diam, in which some had waxy substance. He said this was poison in "acate", and that it slowly dripped out, poisoning occasional animals. I drove N. to reach D. Prieto ranch. About 4 mi. from Ortega, wooden gate. Another 4 1/2 mi. to adobe ranches on tributary near Rio Santa Clara (6100' ind. alt.). Found no one there, tho waited 1 hr. midday. A pond here had 20+ baldpate. Saw water thrush in streambed (water). Returned to Ortega. Then to about 1 mile E. of cattle guard when road led toward Santa Clara. Soon past adobe settlement (Camposanto?), and after 5 miles forded the river. Here shot a lone shorebird. (CBK no. 3863) From start road, 10 miles to Santa Clara, a larger adobe town. In town, flocks 200+ blackbirds feeding on dry grassy ground - seemed to be mainly Brewer's ♂ & ♀, but also streaked females (red-winged?). Then to W. & S. about 8 miles to E-W road and gas.

Journal

13 November 1968.

Nr. Rio Santa Clara, Chihuahua Mexico.

station of Memmonita (next to quesario). Store about .8 mi E. of this (clothes and food & hardware). Then on E. toward Parapetor. Bridge across Santa Clara (intermittent here) was about 3 miles from store. I looked for old MW2 campsite; turnoff was 2.6 mi. from bridge. A new occupied adobe was near site, so camped farther up canyon. Overcast all day w. alto-stratus & ^{a-}cumulus clouds; sprinkled in evening; wind 20 kts. afternoon and blowing gray "tumbleweeds" across plains. Saw no jackrabbits or spilosoma along roads today. Horned owl carcass on road near Santa Clara bridge.

To Chihuahua

14 November 1968. Rain at night; snow on mts. to W. of Santa Clara. Woke to sound of 12+ Orn. canadensis flying over. Drove to heights of Parapetor ranch. Passed pond w. 50± ducks. Windy, overcast, cold. Pond paralleled stone wall, 500± yds. to W. Saw Ardea in nearby pond. Talked with Luis, caporal at Parapetor. He said he knew only the plains, not the sierra, and nothing of bears; it ~~was~~ his brother, Jesús, who saw big grizzly in Mestizo canyon several years ago. (Sr. Saulo, incidentally, is cuñado of Armando Raynal, latter owns ranch.) ^{Bought} Bought an 11 lbs cheese at Memmonita camp (about \$1/lb). Then headed for and down Santa Clara canyon. Cold, overcast, & drizzle continued. Altimeter registered 7300' at head canyon; obviously at least 400' high, perhaps in part due to storm. ^{Descended to Las Varas and} ~~1 mi. down to Las Varas~~

Talked with locale, who said road extended only 1 km. up C. de los Prietos ravine, since summer storms. This canyon borders Menta Negra and El Alamo ranches, and lower part is on Ejido Las Varas. Then drove back about a mile and entered Menta Negra ranch, where talked with the caporal. He had been here 4 years and had never seen a bear, though he said vagueros sometimes saw tracks. He said that 2 black bears from the states had been released in Noia canyon about June, at start rains. One man had reported seeing these and had said they

Santa Clara area— ^{E.} going W.

Gas sta. 0.0 (+ quesariā just w.)
store 0.8

L 45° 1.4

R 45° 1.6

L 45° 1.8

R 45° 2.0

Garage, R 2.7

45° L 3.5

45° 4.2

R 45° 4.3

Then, no houses

River 4.8

Calleg. 5.6

Then S, 90°

Bridge 5.8

Fork (to old camp) 8.4

Journal

14 November 1968

C. Santa Clara, Chihuahua, México

were tame. No other reports. He thought that the americanos (meaning me, unknown to him) had released the bears. Only he & son now on the ranch, but he offered horse, feed, y "toda facilidades" to me. Drove on down to La Parita, ^[c. 4 km. 92] 10.4 mi. from Las Varas (cattle guard 2.6 mi. W. of L.P.). Then 10 miles S. to entrance Rancho 45 (about 10 miles E. across plain) and Las Vocas, ^(caporal) owned by A. Payrol. There I talked with Jesus, who told me about seeing grizzly at bull in Mester's canyon, about 1 km. above cabin, about 10 years ago. Testicles partly ^{eaten} ~~open~~ and a hole in chest; bull soon died. He told me piece ground across road, at mouth Campana canyon, owned by Maximiliano Siñes of Chihuahua. Sansilvestre, next ranch to N. of Rancho Epp, owned by Terraza. Las Vocas, small ranch, has much gatuña and spilosoma mounds, desert birds, scaled quail, and sandhill cranes (on ground as if feeding). Also a large pond lined with cattails. Jesus said he sometimes saw small "garza blanca" (=cattle egret?) there. Saw cottontails in evening, ^{shy gradually cleared.} set out 5 live traps; camped.

15 November 1968. Cool night, and clear. Traps held Peromyscus and

Neotoma. Met Terraza on road; he offered cooperation; said his ranch included lower C. del Mulatto. ^{He knew nothing of bears.} ~~He thought no bears were on~~ Jesus thought lower C. Campana very poor in animals, and he had heard from caporal of Oscar Ruiz ranch (R. Campana) that there were only wolves there - one killed in area ^{about} 8 days ago, ^{Jesus} he said.

Ruiz ranch entered thru Nueva Pamigueria, reached via Potrero Canyon road to L. at km. 54 (N. of Chihuahua). Drove to Chihuahua. Talked with A.

Payrol. Then José Damian. He telephoned Siñes & got permission for me to work on his ranch. Stopped. Then called on Gilberto Mungui, who invited me for weekend on his ranch, Las Tierras, to NW of Chihuahua. Stayed overnight.

Journal

16 November 1968

NW of Chihuahua, México

Departed 0600 from Chihuahua in Musquiz jeep. Drove N. to ^{Majalca} ~~Jajalca~~ road, then on bad road to W. Stopped at ^{Majalca} ~~Cumbre de Jajalca~~, a Natural Park. Many private summer houses built there. A small town of ugly adobe in poor repair. Apple orchards and livestock on some places. Some rock formations painted up with initials. This was piñon-oak-juniper zone, with blocky rock formations, and said to be very popular in summer. The ranch was 14 miles W. of this. Arrived about 1030. Ranch in oak-juniper-yellow pine, ~~andragón~~ - Bautelana hilly zone and comprised about 9000 hectares. Fine rock formations. About 500 head cattle. Perhaps 10 acres in oats, & no more arable ground. Found few deer tracks, but Musquiz plans to fence about 3500 acres with 7' deep deerproof fence and import some whitetails to stock it. Fence not really started, except posts cut. Several large prazos make good water holes in canyons. We drove jeep road up and down across ranch but saw no deer, quail, or turkeys - all scarce, & last perhaps absent. If M. can develop wildlife through habitat improvement, it would be good demonstration area. / An old hunter at ^{Majalca} ~~Jajalca~~ [This place about 25 mi. WSW of La Parrita] said some rather tame black bears there, but no grizzlies.

He thought there were some in Sierra del Nido, to N. Then he told of a hunter bagging a "tigre," with spots, in this region; he had seen photo of it. He said he had killed about 25 bears in his lifetime. Humm! (shudder. Cost no.)

In evening, squealed in a Urocyon ♂, which Don Villento shot; promise pelage.

17 November 1968. Sunday. Saw 10± ducks, probably diage and mallard, on pond 1/2 mile S. of ranch house. Kingfisher flew over. Chipmunks still active. Walked & talked, and in p.m. drove back to Chihuahua; about 40 km.

Journal

17 November 1968

NW of Chihuahua, Chih., México

to highway, at km. 32. at one point saw a fox in brushy field at side, at night. I squeaked and it ran toward us, to about 20 yds. Stayed w. Gonz. M.

18 November 1968. Mon. In city, stopped, picked up and answered mail. Tele-

phoned Oscar Ruiz, and received permission and instructions for going to his ranch, La Campana, via Canyon Santa Clara and S. via campamento 83. Apparently tricky & rough road. He radioed his cousin, Irineo Ruiz, at Rancho Herradero, to help me. Drove N. to Herradero and talked w. Irineo; he will ride horse directly W. up Campana Canyon to the ranch, while I go by road. He and Oscar both said bears and tracks had been seen there, but

apparently black bears. Ranch lies S. of Manta Negra, ^{E.} of Mamonita camp. (7100' indicated elev at camp)

I drove up Santa Clara ^{Canyon} and camped at head, to N. of cattle guard.

19 November 1968. Tuesday. Started W. on road, and after about 5 mi.

(at second prison on L) turned S. toward "camp 83". Wandered about, enquiring way, and finally went S. a few miles from a pueblo to a concrete presa in streambed, w. water, and just beyond took road uphill

and to E. (camp 83 apparently was down canyon to W. of prison). From there, about 10 miles of rough road to ranch. About 3/4 there, passed

2 old sawmill sites by road; much scrap and sawdust - before there, a group of abandoned odder & corals w. a black "pila". Before arrival ranch (a crude sign said "R. Pinosaltor"), met ranch boy descend-

ing in cart with family; said going to a fiesta on neighboring ranch. He said he saw bear on ranch about July (Irineo later said

it was in canyon next to (S.) ranch house, and downstream to W). He was sure it was "del rancho," and not one of the released ones. He thought

all bears there were "negros". I asked length of bear; he indicated less than 1" long. (Irineo later said he saw one in head C. Campana

about July) Boy (30 yrs.?) said he saw tracks about April, not since.

Journal

19 November 1968.

Rancho La Campana, Chih., México

Arrived ranchauser (2 stone shades, Oseariso. heavier better & propane stove) about 1315. Inesio soon came by horse; said he left Herradero at 0900 and that trail was fairly direct up N. fork of C. La Campana. I walked up & down steep sided canyon just S. of hauser. A 100 meter pond at presa, & water for a few hundred yds. below. Otherwise dry canyons. Cattle browsing & grazing of bunchgrass heavy, but all cattle gone (to Herradero). They graze here only July to October; then trail to Herradero, & calves born there. Vegetation is small oak (15'), oak brush, perujon, lechero & other peris, rocks, bunchgrass. Much drier than Western canyon, but far more birds - Steller and Mexican jays, junco, towhee, canyon wrens, fliers, hairy woodpecker, y-b sapsucker. Elev. 7900' hauser.

20 November 1968. Clear calm night; no frost. With Inesio, went by horse

N.E. to rim of C. Campana, down a rough tributary for 2 hrs to an ojo, where there was clear year-round running water and 15-20' long pools. He said this only ojo in canyon; he saw bear near ^{here} last April (approx.), but none since. Canyon burned by lightning fire about 4 yrs ago. Small oaks, few peris, oak brush, bunchgrass - but mostly red rock cliffs, towers, rock strata. Another horse downstream brought us to main fork, where much horse sign, remnants old rock, and larger oaks in bottom. Red cliffs about 1000' high some areas. Plain clearly visible a few miles to E; Inesio said about 1 1/2 hrs. from there to Herradero hauser. We went a few hundred yards up fork to S. and visited Cueva de los Apaches. This was about 100' long, 60' deep, and 15' high, and lay at foot of cliffs near wash. Ceiling & walls black, or with smoke, but bore a few dozen Indian paintings, perhaps made with mud on fingers. Some vertebrates represented as well as men and abstract designs. Satisfying

Journal

20 November 1968.

Rancho La Campana, Chih., México

to see no current initials or vandalism. | Shortly beyond, trail ascended a ^{smaller} tributary going W., and we ascended it - steep rapid climb. (The larger fork to S. had no trail; hence not observed by cowboys. (We had seen 2 hunter compasses in cover on way down canyon.) This was the main trail up Campana; we arrived at ranch house at 1610. The trail had been rough; washed out in spots - had to dismount and lead horses; trees fallen over trail, etc. Rare deer tracks during day; fox scat and probably coyote; no sign of bear droppings tho looked for them. Little bird life - I saw no falconiforms at all. My legs (especially knees) sore from 8 hrs. ride. | In evening shot woodpecker, in piney canyon to S. of house. Cold, clear, calm evening.

21 November 1968. Light frost, and 1/10 alto-cumulus 0000. With Lino, hiked down canyon

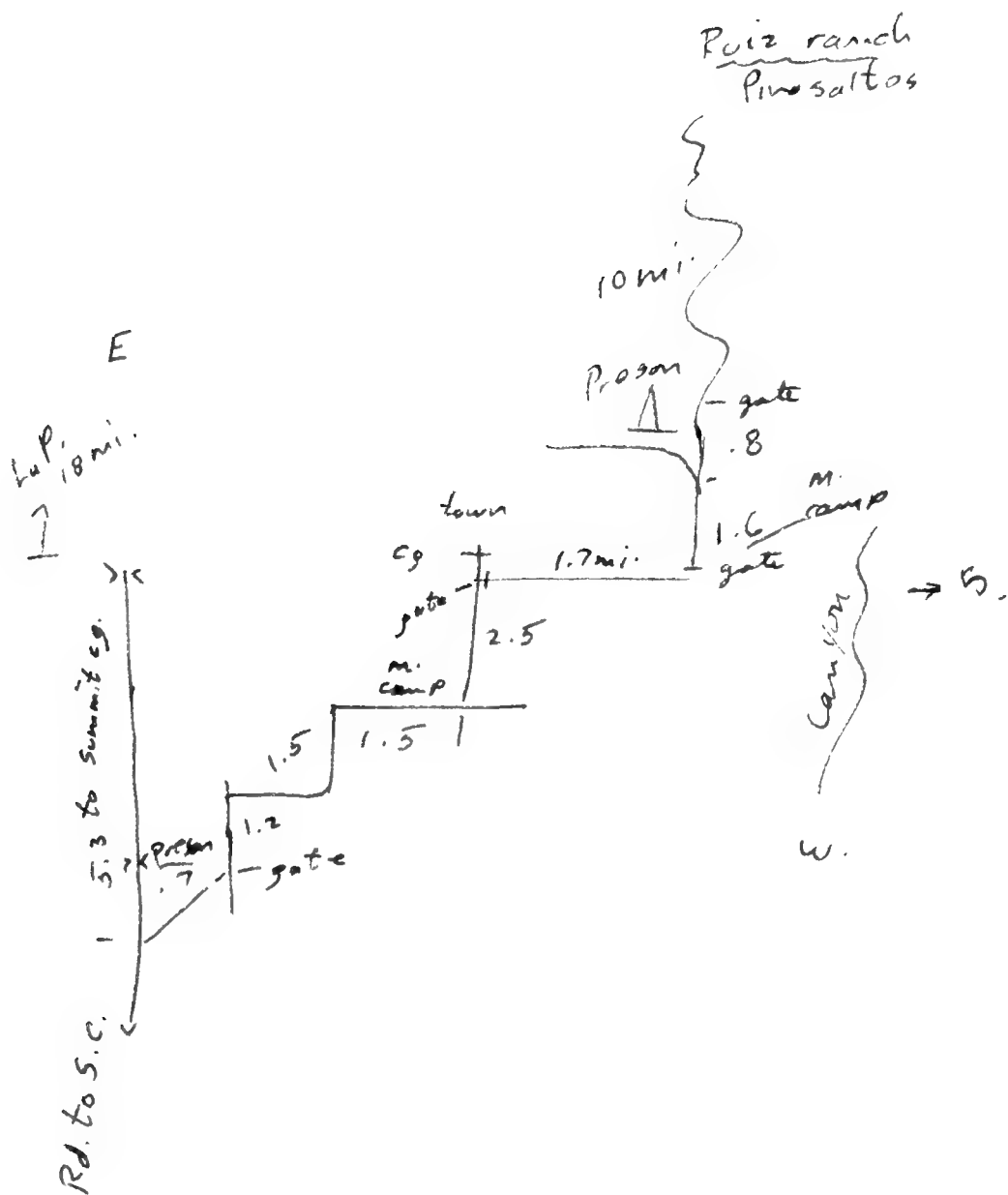
just S. of house for 2 hrs., then up next canyon S., where he had seen bear about July, 1968. Good spots water in first canyon, though mostly dry. Much dead timber; scarcely a cypress alive, & many fallen. Few tracks, few birds. Second canyon had more tracks (deer, fox), and at one point on bench under oaks I found old apparent - bear droppings; plant fibers and acorn shells. Upstream, met covey of 8± M. quail, including at least one ad. ♂. (Lino said few here, tho he knew them well.) Saw no deer. Back at house at 1300. Put up 3 birds & prepared to depart. Left 4 PM and drove down to foot Santa Clara canyon, where camped (about 9 P.M.)

22 November 1968

TO Rancho Providencia, Chihuahua

Drove to Km. 92 (La Parita restaurant), then S. to Rancho Experimental, & road drove in. Purpose - info. and identification grasses. Was met by Guillermo Valadez (P.O. Box 682, Tel. 25655, Bolivar 1000, office no. 4, Chih.), in 20's, who spoke English and had spent a month at Denver Wildl. Research Center (USFWS). He said common grasses: Boutelou gracilis, hirsuta, curtipendula (Sierra);

La Parrita



La Parrita (km. 92) -

S. to start Arco Iris ^(km. 1752) $\text{turn}_x = 3.1 \text{ mi.}$

Km. 92 to R. Experimental entrance = 6.9 mi.

Km. 98 restaurant - 4 mi. N. of La Parrita.

Journal

22 November 1968.

Rancho El Nido, Chihuahua, Mexico

Trichone californica (Heera), *Leptochloa dubia* (Heera), *Andropogon barb-
eroides* (common native) (+ 2 introduced *Andropogons*); *Setaria macrostachia* (sp.?)
common; called "temporero." Chief oak - *Q. emeryi*. Local shrubs; *Acacia
constricta* ("gatuña"), *Prosopis glandulosa* (tree) and *P. juliflora* (bush).

He said Prof. Alberto Pérez, Botany Dept; Escuela de Ganaderia, Univ. of
Chihuahua, had only collected Chihuahua plants, including Rancho Exp. area.

The old adobe and church seem to be nearly ^{former} ruins of Terraza family; now
bldgs. in ruins. Terrazas once owned millions of hectares. One remainder

is Alfonso (Poncib), of Rancho Sanilucita. Valadez interested in studying
wildlife and rodents; I gave him talk on rodent control, and range
rodents in relation to range management. Rather pudgy fellow and did
not seem too energetic. He and another boy tried to identify my collect-

ion of local grasses and named about half the species. / *Bauer black-
birds* on this ranch near houses. Saw a few marsh hawks. Rancho Exp.

good place for rodent plots or long term studies, I think. They
offered house for overnighting. / Departed for R. Prudentia. La Parrita

weather station is a few miles W. of km. 92 on highway, far out on
the open plain. / Backtracking to Ruiz ranch - there was a prison

below ranchhouse, & Irineo said there were "sardinas" in it (indicated
about 8"). / Km. 92 to Prudentia gate = 10.8 mi. Talked with the

caporal, Fortino. Then to El Nido, where talked w. Espinosa and Rodriguez.
Former had worked 4 years on Terrenates and said they had seen black

bears there; one canyon named C. de los Oros [just W. of C. de la Madre,
I think]. In presa near houses saw 1 small deer, 2 hilldeer,

3 squirrels (greater yellow legs?). In cañon area, saw *Pyrrhoxys*
thrasher, brown towhees. / Visited 50' deep horizontal old manganese

mine 300 yds. W. of ^{lumberhouse} ~~lumberhouse~~ and found piles of ore but no

Gate from carretera to Providencia hg.

0.0

2.9 mi. - gate, wire

6.2 mi. - gate, open

6.8 - cattle guard

7.0 - ranch house

Provid. hg. 0.0 → to ~~SE~~ SW

↓
Pipe gate 1.1

woodg. & cattleg. 5.0

Vertical slot woodgate 9.5

El Nido hg. 13.1

Journal

22 November 1968.

R. Providencia, Chihuahua, México

lots (other ^{more} caves up Pajarito canyon). Camped lower Pajarito.

23 November 1968. No frost; day, calm. Drove to road to C. de la Madera, about 1.5 mi. from Pajarito entrance. Then 3.3 mi. thru Rincon del Alamo to locked gate, and 1/2 mile farther up C. de la Madera (road much washed beyond). Then walked up road. Flushed coveys 10± Montezuma quail in canyon near dry streambed. At "pila," i.e. 1/8" thick. Walked up canyon to W. for about 1 mile; rare spots water near; no new bear signs. Then back to pila, 1/2 mile S. + back N. to car. Again flushed 10± quail, about same spot. Then out locked gate, and drove 7.6 ^{mi} to higher. of Rincon del Alamo. Talked w. ^{Socorro Liras} caporal; then on side road about 2 miles to a mangan ^{Roberto (?)} ase mine where Martinez Camacho worked. (His family, with several kids, living in stone hut with roof made of old gasoline cans + thatch.) He still thought there were some "osor plateado," though last he saw was in 1961 - in upper C. Higuera. He thought this the same one that had killed 3 ea cattle. He also mentioned seeing one in C. las Varas, just before fence (edge of Ej. Las Varas). He said that about 15 days ago he saw a bear in upper Mesterio, and that he had seen my (distinctive) tracks in streambed there (bear up on sidehill). He also said many "cocomon" on ranch of David Prieto. He said that in 1957, with A. S. Leopold, they camped in Arroyo del Alamo. I arranged for boy to show me road to ^{Terrenates} ~~Terrenates~~ tomorrow. Drove about a mile N. and camped near edge wash. Saw 2 coveys 10± Callipepla. Mesquite + gatuña here, & much the Aristida. Probably good Dipodomys area. [Caught 2 Dipodomys; put up one.] Set 15 traps. Cool clear calm evening; moon fairly new. 10± Mexican jays still, mostly w. bill yellow toward base. 22 Nov. collected longspur, and saw flock 30± over "painted," where they dipped low and some practically landed in dry weeds in water. Some bird flocks to 200±, possibly

23 Nov. Peromyscus maniculatus?

♀ 135-37 (tail broken shrt.) - 22-18,
lactating; ut. sc. 3L 2R. ; discarded

Journal

23 November 1968.

Rancho Providencia, Chihuahua, Mexico

of same, with much white in tails; rather transparent wings.

24 November 1968. Again talked with Docono Lison (sp.?). He said many miners this area and Terrenater, and that they hunted much.

He said E. de los Osos, on Terrenater, much traveled, and unlikely to have grizzlies. Went up road to SW toward Terrenater, tho said to be impassable ^(just before) near a locked gate, + very bad arroyos ^{desert} ~~desert~~ on W. side.

Lower part canyon desert wash - many sparrows, *Pyrruloxia*. Then open oak rolling grassland. I flushed owl (*Oriol*?) from oak tree where doves rested (CBK no. 3879). Occasional large rock antelope; saw rock squirrel on one. Continued on to about 6 mi. from Pinar del Alamo hdytrs., but still short of ridge to Terrenater area. Mostly blue grama grass. Doves on one presa. Much more humid vegetation than near hdytrs. Returned to P. del Alamo house. 4.8 miles then to gate into La Providencia; 3.3 more to El Rido wash, and 11.2 more to Providencia hdytrs.

Windy today. Saw one small *spiloxoma* at edge road. Large flock of longspurs. Returned key to Fortino at Providencia house; he said ranch had 46000 ha. and 3000 cattle. Then 7.2 mi. to highway. I drove across and entered road to Rancho El Alamo. Large mesquite bushes and tall dry weeds between along road to lake. Lake muddy.

In distance saw hundreds of snow geese near shore and some flying. Ducks and coots scattered near close shore. Drove on to Las Vacas ranch, where camped. Talked again with Jesus

^{rc?} Escapliga (pronounced like "rc" instead of "pl," or he spelled it). Of the grizzly attack on bull, he said they heard bull roars in night; went in morning and found bull wounded, and tracks on ground indicating bear had mounted bull with forefeet atop and hindfeet on ground. They saw the bear

Canetura - 5. from R. El Alamo entrance

W ash	0 + 1.1 mi.
gate to W	1.9
gate to E	4.4
km 98 (restaurant)	6.5
km 92	10.7
start turn (arcobris)	13.8
end turn S	16.3
Rancho Exp.	17.6
^{slight} start turn R. (W)	18.4
El Herradero	19.4
Los Varas	20.3

C. de la Madera gate
to Rincon del Alamo by the - 7.6 mi.

Altimeter

24 Nov. 1968 -

Indicated 5200' at Rancho Exp. sign; close to weather sta
published elev.

Set same throughout fall trip.

w/i 100' of posted alt. continental divide,
N. Mexico, about 4500', on 27 Nov.

But - 600' low at sea level to 2000'
in Death Valley area, Nov. 28.

Journal

24 November 1968.Chihuahua, México

about a km. away, not at the bull's.

25 November 1968. Drove to C. Chihuahua, 47 mi. from gate to overhead welcome sign. Talked with Gilberto Gonzales and brother Mario. Latter not a hunter but trying to push plan to develop wildlife resources in Chihuahua on paying basis, probably starting with goose hunting. (I think he had already suggested this to the new governor). Said farewells to José Damian (he had not questioned David Prieto yet about bears). Shopped. Then started north, 50 miles to Rancho Experimental gate, and 22.8 more to railroad crossing (15.9 from km. 92 (La P.) restaurant). El Sueño 23.5 beyond this R.R. crossing. Rain en route. I camped near Villa Ahumada in brush desert.

26 November 1968. On to Juárez and across border. No inspection on Mexican side, tho I explained I had been camping in sierra. About 20 min. inspection on U.S. side, but no objection to bird skins or bones. Continued on to Los Cruces, where visited Ralph Raitt, Charles Thacher, and others.

27-29 November 1968. Snow, about 3", on ground at Los Cruces. I drove W. via Lordsburg, Phoenix, Kingman, Las Vegas, Death Valley, Bishop, and Taos, and Placerville. Deserts enticing but cold at this season.

No species accts. - See Catalog.

End Chihuahua Trip, 1968

Going S.

Rancho 45 road

= 0

Chihuahua (bienvenidos overhead arch sign) 47.1 mi.

R. Hernandez rd. - 1.9 mi. S. R. Experimental rd.

Km. 92 restaurant - 6.9 mi. N. R. Exp. rd.

Railroad - 15.9 mi. N. of km. 92.

El Suero - 23.5 mi. N. of first crossing.

To E.

Rincón del Alamo lg.

0

gate

+ 3.4 ±

gate into Pravid.

0 + 4.8 mi.

Cross wash

5.6

Pajarito mark gate

6.2

El Nido wash

8.0

Wood gate, IIII

9.1

C guard & gate

14.3

Papi gate

18.2

Pravid. house

19.2

Cattlelg.

21.6

Open gate

32.2

blu gate

33.5

Cantera

0 + 36.4 mi.

C.B. Kotard

1969

Catalogue

3901 - # 3920

4173 - # 4333

Chihuahua, Mexico

1969

Specimen Catalog

Mexico
[23 mi. NE of Santa Clara]21 June Arroyo del Mestero, Sierra del Nido, Chihuahua, Mexico 7500'.3901 ♂ t. L4, R7. Vireo 17 gms, no fat.

22 June

3902 ♂ t. 4 Junco some fat

23 June

3903 ♂ t. 6 Vireo 16 gms, no fat.3904 ♂ t. 6 Dendroica 13 gms, sl. fat.

SK only

3906

Canis lupus pickup; trapped ^{ca} June 1

SK only

3907

Lynx rufus " ; " ca. " 129 June Sierra Mojón, Chihuahua, Mexico. 5200'.3908 ♂ t. 5 Otus asio

30 June

3909 Phrynosoma - small3910 Phrynosoma

just E. of mine.
 Actually on road about ³ mi N. of camp, near Quaternario,
 (on Santa Clara River)
5 mi. S. of San Lorenzo, Chihua, Mexico. 5400'.

3911 Frog3912 Sceloporus magister ?3913 Snake

[just above ranch house]
8 July Cañon del Alamo, Chihuahua, Mexico. 7300'.

3914 Lizard sk 593915 skinned. Pituophis catenifer - freshly dead on road.

actually at edge plain about 4 mi. S. of ranch house (= 15 mi
 ENE of Santa Cl.)

10 July 8 mi. ENE Santa Clara, Chihuahua, Mexico. 6800 ft.

3916 Phrynosoma douglasii

Rancho
 2 mi. E. of Parapeto Hgts., at edge road on plain, thin grass.

30 June Sierra Mojón, Chih., Mexico. 5400 ft.

SK only

3917

♀ imm.

Peromyscus

Dry cactus-rock slope

103-106-20-18

Specimen Catalog

1969

7 July 22 mi. NNE Santa Clara, Chihuahua, Mexico. 9000 ft.
 [nr. summit of Sierra del Nido]

skull only

3918 ♀ 5⁺ t. scars. Peromyscus

200-108-22-21

21 June

alcoholic

3919

20 mi. ~~NE~~ NNE of Santa Clara, Chihuahua Mexico. 7500'
 [Lloron, in Arroyo del Alamo]

♂

Empidonax fulvifrons

Nest photoed; voice recorded by G. Powell. Nest in pine, tie branch.

coll. alive

3 July

20

~~23~~ mi. NNE Santa Clara, Chihuahua, Mexico.
 [Ojito, upper Arroyo del Alamo]

3920

Crotalus pricei

Among rocks by spring. Taken alive & kept at MVZ.

(etc.)

Also see bats in formalin,

nos. 4173 → 4335

C Koford
1969

Specimen Catalog
Chihuahua, Mexico.

MVZ Accn. 10881.
Labels by:
Myron L. Long Haven
+ Wm. Johnson

all
alcohol ↓

[These numbers in blocks, higher than other 1969 specimens
from Chihuahua. Others in 4000 range from Peru, 1969.]

24 June

5 mi. N. of Cerro Campana, Chihuahua, Mexico. 5600 ft.

4173	♀	<u>Myotis californicus</u>	no measurements
4174	♂	"	"
4175	♀	"	"
4176	♀	"	"
4178	♂	"	"
4179	♂	"	"
4180	♂	"	"
4181	16 ♀♀	<u>Myotis evotis</u>	no measurements
4199	3 ♂♂		
4200-	7 ♀♀	<u>Myotis subulatus</u>	no measurements
4210	4 ♂♂		
4211-	7 ♀♀	<u>Myotis thysanodes</u>	" "
4221	5 ♂♂		
4224	♂ L.3	<u>Myotis velifer</u>	" "
4225	2 ♂♂		
4226		<u>Myotis volans</u>	" "
4227-	6 ♀♀		
4245	13 ♂♂	<u>Pipistrellus hesperus</u>	" "
4246-	6 ♀♀		
4253	2 ♂♂	<u>Eptesicus fuscus</u>	" "
4254	♀ no emb.	<u>Plecotus ghyllotis</u>	" "
4255	♂	<u>Plecotus townsendi</u>	" "
4256-	5 ♂♂		
4260		<u>Antrozous pallidus</u>	" "
1 JULY	20 mi. NNE of Santa Clara, Chihuahua, Mexico. 7500 ft.		
4261	♂	A [in Arroyo del Alamo]	
4261	♂	<u>Myotis californicus</u>	no meas.
4262	♂	<u>Myotis evotis</u>	" "
4263-	6 ♂♂		
4268		<u>Myotis thysanodes</u>	" "
4270-	3 ♀♀ 2		
4274	1 ♂♂ 3	<u>Eptesicus fuscus</u>	" "
4275-	5 ♀♀		
4285	6 ♂♂	<u>Plecotus townsendi</u>	" "
4286-	2 ♂♂		
4287		<u>Myotis subulatus</u>	" "

Specimen Catalog

1969

19 June 5 mi. N. Cerro Campana, Chihuahua, Mex. 5600 ft.
 4286 2 ♂♂
 to 4287

Myotis subulatus no meas.

4288 ♂ *Myotis thysanodes* " "

4289 ♀ *Pipistrellus hesperus* " "

4290 ♀ *Plecotus townsendi* " "

26 June Ojo Laguna, Chihuahua, Mexico. 5200 ft.

4291 ♀ *Pipistrellus hesperus* no meas.

4292 ♀ *Plecotus townsendi* " "

} taken by
hand from
buildings.

Cañon del Nido, Chihuahua, Mexico. 6000 ft.

4293 -
4294 ♀ *Myotis* sp.

27 June 4295 ♀ *Plecotus townsendi*

4296 ♀ *Myotis* sp.

4297 ♂ "

4298 ♂ "

4299 ♀ *Pipistrellus hesperus*

4300 ♂ t. 3 *Plecotus phyllotis*

30 June 5 mi. S. San Lorenzo, Chihuahua, Mexico. 5400 ft.
 20 mi. NNE Santa Clara, Chihuahua, Mexico. 7500 ft.

4301 ♀ *Myotis*

4302 ♀ *Eptesicus fuscus*

4303 ♀ *Tadarida brasiliensis*

4304 ♂ "

4305 ♀ no emb. *Myotis velifer*

21 June Arroyo del Mestizo, Chih., Mexico. 7500 ft.

4306 - 50707
4311 1 ♀ *Tadarida brasiliensis*

4322 - 40707
4326 1 ♀ *Eptesicus fuscus*

4312 - 40707
4321 1 ♀ *Myotis* sp.

4314 - 40707
4327 1 ♀ " *thysanodes*

4328 ♂ *Plecotus phyllotis*

all alcoholics

Spermien Catalog

1969

4 July

alc.

4329

♂

Antrozous pallidus

alc.

4330

♂

Eptesicus fuscus

4331

♀

23 June

alc.

4332

♂

Peromyscus

alc.

4333

♀

"

Recessan

END

Arroyo del Neco, Chihuahua, Mexico. ^{7500 ft.}
~~5400 ft~~

C.B. Koford

1969

Journal

Chihuahua,

Mexico

C. Koford
1969

Journal
Sierra del Nido, Chih., trip
Mexico

15 June 1969, p.m., left Berkeley, Calif., for Sierra del Nido.

Departed from Berkeley in MV2 panel truck, for trip of about 6 weeks, accompanied by Erik Koford. Picked up George Panell, grad student and bird voice recorder, at Davis. Then on to Sagehen Creek, where we checked squirrel ^{nest} boxes and then spent the night. ^{16 June} Next day drove via S. end of Lake Tahoe and highway 395 down east side of Sierran. Stopped in Death Valley, where it was raining and some areas flooded. Camped near Calif-Ariz. border. ^{17 June} Next day pushed on. Visited Charles Thacker and half Ralph Raith in Las Cruces, New Mexico. ^{Next day} Arranged car insurance with AAA in El Paso & purchased supplies. Then crossed border with no trouble. But in Juarez was stopped by policeman, for going too fast through an intersection marked (obscurely) 10 K.p.h., and had to pay \$5 as a "gift" to him. At car check station at km. 20, charged \$2 apiece, for nothing in particular (no fee required on previous trips; no receipts given). Then on south on highway 45, until past midnight. / We were to be joined by Gene Christman in Chihuahua City on June 25.

Journal

19 June 1969

Chih., Mexico

5 mi. N. Co. Campana, S. del Nido,

Arrived about 0130 and camped in bottom near cattle guard about 2 1/2 mi. W. of turnoff at km. 92. On road saw occasional Dipodomys and one apparent Perognathus. Dry aspect - apparently no appreciable summer rain yet. / Cactus wren - saw 3 old nests in oaks near dry streambed. Later, Erik found nest w. 2 fresh eggs, 12' up in isolated oak. Nest of straight dry grass, w. some fuzzy heads of a composite forb. (Old nest ~~had~~ decorated with apparent toilet paper). These were noisy at times; saw 10+ in 2 hrs. Mockingbirds conspicuous - individuals in shrubs in wash area & slopes nearby. / George P. said he saw a Phoeniceptera among scattered 20' trees in an open brush in the wide wash. [Long wing, same?] I saw 1 Black-headed grosbeak, & plumage, atop a 20' oak. / George went out looking for birds & nests; I stayed near campsite. I saw Lark Sparrows, occas. vid in bushes in wash. Brown Towhees - occas. 1 or 2 scratching in sandy ground of wash. Loggerhead Shrike, 1. A pair of Scott Orioles, or w. insect in bill, went round an isolated ash tree (green; seeds on tree), where I saw apparent nestling. Saw occasional Cassin Kingbird or Scrub Jay in oaks. A Buteo (ferrugineus?) soared over - tail uniform gray below, under wingtips black, medially a white "window," then dark area under wrist; identif. not positive. / Occas. black swallowtail butterfly on shrubs. Oaks - principally med-sized, evergreen, bleared, w. green acorns 1 cm. long. Small junipers, to 6'. Mesquite largest shrubs; much catclaw. But "pink foxglove" shrub, & "pink-stemmed" shrub, most common in the wide wash. (E. of 92 restaurant) This near fence N. of cattle guard. / Weather - occas. ting cloud. Shrub "B" - white 5-petaled flower, central yellow bud, + fuzzy pink stamens, leaves NM - this size (photo). / Drove up road 1 1/2 miles. Vermillion Flycatcher - occas. or perched under crown ash trees in dry streambed. Also in there, Curve-billed Thrasher, W. Wood Pewee, Brewer Wren (last also in

Mileage

Km. 92 → Chih. (GMC panel, 17" wheels)

Km 92 27.4 (restaurant)
Milepost 1755 Odom 77728.46

Arco Iris 30.5

Turn R 45° 31.3

San Silvestre gate 32.2

Turn L 15° 32.8

Yerbaniño Lo E., Hill to W

Rancho Exp. (gate, E) 34.2

R 15° 35.1

Gate E 36.1

Cerro R 37.3

Rancho 45 37.0

C. Chih. (Remex sta) 77783

Lv. C. Chih. 92

Cattle g. (W. of km 92) = 850.5

Camp, Campana (5500'.) 77852.5

Airms. - set 4750 Chih.

Campana camp 5500'

Journal

19 June 1969

Chihuahua, Mexico
5 mi. W. Co. Campana, Sierra del Nido,

adjacent willow shrubs. Barn Swallow - occas. one flying over canyon bottom; also cliff swallow, but no water evident. Bewick Wren - saw short-tailed fledging. / Continued on to old Campana campsite, 2 mi. from cattle guard, & talked w. corporal at adobe hut. No water in creek save rare puddle, but a hot spring of good water, & near old campsite a cattle trough about 30' long. & 3 ft. wide (2 fish in it). This on Rancho Los ^{TAPIAS} Tapas, of ~~old~~ ^{old} ~~Don~~ ^{Don} Portillo P. In trees, cottonwood, near pig corral, 10 \pm Brown-headed Cowbirds. In area saw W. Wood Pewee, Barn Swallow, Robin, Mourning Dove, White-winged Dove, White-throated Swift (5 \pm). / ^{C.N.} Pewee on nest, cup 20' up at edge crown ash, on 12" horiz. stub branch going out, tree about 30'; over dry streambed, near cliffs; nest neat on outside, & bound around w. spider web, it appeared. / A robin nest about 100' distant - at 18' up, 5' in from tip horiz. branch, in 35' green ash tree, over dry streambed; made of twigs below, dry grass above, & no mud visible with beaver (bird froze on edge nest). / Barn - corporal showed me rock cliff on side Noria Canyon, & said a large bear killed there last year, about ^N November! (one of the released ones ^{June '68}?). / Area of cattle-trough shaded, w. 30' cottonwood, tree willow, big blue oak, & mostly ash. Small junipers in canyon & adjacent slope. Beside tree willow, a shrub willow, & small tree w. leaves slender about 30 cm. long; so various willow. / Saw a Rock Wren on ground under ash by cliff; it carried insect up cliff (G.P. said it later fed young). / Nest of Heermann Tanager - ♀ on, 12' up in small-leaved willow about 20' tall; placed in fork, apparently made of green dried forbs or grass, at edge of open sand and shrub-willow zone of flat wash, about 50 yds. from W. spring. / George P. remained here, while Erik & I went to Chihuahua City. Saw Meadow Lark near Caratena. / Called at office of Delegación

wwpewee
nestPiranga fl.
nest

C Koford
1969

4

Journal

19 June 1969.

Sierra del Mdo, Chih., Mexico
C. Chihuahua + lower Canyon Santa Clara, 5500'.

Forecast, but clouded before 14:45, so left note for José Domínguez. Then visited Don Gilberto González Murguía (No. 3, Calle Pacheco), talked, + got shotgun that I had left there. Shopped, + returned N. Very hot in Chihuahua; about 100°F. Arrived about 1830. Saw Blue Grosbeak, incl. ♂, near small shrub in dry open grassland.

Eve - about 8/10 overcast, cumulus - but clearing. Evening - saw 3 Nighthawks about 500' up, circling. Heard Poorwill's calling evening. / Erik + I tried to catch bats with hand nets over cattle trough, seeing flashlights, + caught 5 of 5 species, including Myotis + Plecotus (saved in formalin). A Myotis thysanodes had 2 strelids on it (but was in ^{bag} bag other). Another Myotis had 1 embryo. /

Campara Camp

20 June 1969. Cooled at night; clear. Saw red Larinet drink at trough; G.P. said saw 2 red ones alongside each other. No swallow nests cliff here. Saw 15± Lark Sparrows, in trees, usually only 1 - nesting? Occas. 1 or 2 Turkey Vultures soared over cliffs. Occas. 1 White-winged Dove flew thru trees in bottom, but more Mourning Doves. Band-tailed Pigeons, up to 5, rested in trees mid-morning. Saw about 10 Lark Sparrows, 10 Brown Towhees (often in trees, 10' + up). / Vegetation in flat bottom, about 300 yds. wide, largely Acacia about 4' ave. height. Occasional juniper bush. The sink-fogglow bush common. Brown Juncos about 8'. / Heard repeated loud "caw!" from area of "dry waterfall" in cliff, where scattered shrubs; Coppery-tailed Trogon? Saw over grass slopes to N., one Black Vulture (whitish areas beneath wingtips). / Brown-headed Cambeids - flock of about 10, flying + perched ground + coral fence. / Departed about 1000 hrs. for Rancho El Mestizo, planning frequent stops for observation. About 1/2 mile up road, Cliff Swallows building nests under jut about 70' up in 100±' red rock cliff. Some nests a mere basal crescent, others complete. About 15 nests. No water apparent in streambed in either direction for 1/4 mile +. / About 6 White-throated Swifts zipped about near same cliffs,

Set 2 altimeters
at 4750' in
C. Chihuahua -
both read 5500'
at Campara camp.

1st seen
here

CKoford
1969

5

Journal

20 June 1969

Cañon de Santa Clara, 5500'

but no nest sites evident. Eids found fledgling Rock Wren at foot of cliff. Red flowers ^{veg.} on ocotillo; long yellow + purple flowers bursting on yucca. / Acorn Woodpecker - one flew from hole only 5 ft. up in trunk living small-leaved willow; deep newly dug hole; trunk 12" diam; right alongside edge road. / High to SW, pathless w white wash. Camp + .7 mi., new cattle guard. Another Acorn Woodpecker at in nest hole in small-leaved willow trunk, 10' up. Camp + 1.4 mi., adobe house nr. big cottonwoods. Again, Acorn Woodpecker in hole in living small-leaved cottonwood, 56' up; only 6' up. Camp + 3.2 mi., piñon atop ridge to N and S. Slopes of grass, rocks, and scattered oaks. Occas. saw a ^w Bluebird, Vermilion Flycatcher, Robin, or Brown Towhee from road. Main shrub in bottom is pink-tassel shrub. Saw Linn. Pair Hepatic Tanagers in oaks, flat bottom. Camp + 3.5, cattle guard at Primavera settlement, 5700'. Ash-throated Flycatcher in tree by road (3). About 6 House Sparrows seen in town. 1 Red-eyed Cowbird (GP said). 1 Black-headed Grosbeak. Above saw no Steller Jays below Primavera; some catclaw reaches that level and higher. / Above Primavera, Green-backed Goldfinch near road. Above town 3.4 mi., dam to N. is dry - no water in streambed; occasional yellow pine (about 6200'). Albizia juliflora. Some catclaw by road, to 6' tall. Scarlet Penstemon in flower. Chipping Sparrow singing in oaks (2). Bushtits seen (2). 6300', 6 Mexican Jays, 1 Hepatic Tanager, 1 Flicker. Some madrone trees. Above town 4.5 mi., 6350'. Scattered piñon on S. slope. Green piñon cones by road. Often saw a chipmunk or rock squirrel. Oaks mod-thick, in narrow bottom. / We came to hillside dry grass to N, where 3 roqueyes in yellow flower. On single stalk, a mockingbird, Scott Oriole, 2 hummers (Broad-tailed), C. Kingbird, & possibly Flicker, at same time. On another, Acorn Woodpecker, Pied-billed Grebe. Again, Acorn Woodpecker & Scott Oriole on one plant. There about 6400', open hillside near scrubby

Journal

20 June 1969

Cañon Santa Clara, Sierra del Nido, Chihuahua

oaks, about 6400'. Probably Broad-tailed, Beebe, & White-eared Hummingbirds. From road, 6.3 mi. above Breñovera, saw a ♀ Coppery-tailed Trogon fly in oaks, 100 yds. from cliffs (white chest band). 6700', Painted Redstart in oaks by road. Mexican Jay - a yellow-billed juvenile. Orcas. Limber (?) pine on slopes near road. Saw Canyon Wren. A Hummingbird at red flower on acatillo. "Capulin" buds w. 5 mm. green fruits. Summit 8.5 mi. above Breñovera; altitudes road 7100' + 7200', at cattle guard. Beyond, pines numerous first half mile, then scrubby oaks about 12' high, with Scrub Jays. Orcas. White-breasted Nuthatch. After 3 mi., oaks about 20' tall, & well spaced. Ash-throated Flycatcher in one. At a reservoir pond, much drawn down (100 yds. long, big dam), we saw 3 Barn Swallows, 5 Violet-green Swallows, 3 C. Kingbirds, 1 B-L Catbird, 1 Meadowlark, Killdeer, Acorn Woodpecker - all at edge pond. On post grass plain, where occasional Meadowlark, Sparrow Hawks. After 11 mi., turned N. Over Memmonite Plain, open oak woodland flat, saw 21 Ravens, milling about, very high (white-necked?). Then Horned Lark 2, House Sparrows - 20+ on wires, Lark Sparrows - 30+ on wires. Barn Swallow over pond. Kingbirds, Raven, Turkey Vulture. Visited the ^{51"} store. Then on to W. Near a pond, 15+ Horned Larks, 6 C. Kingbirds, 8 Barn Swallows, 10 House Sparrows. Many more Horned Larks near Canal de Beñor. Grass eaten up & beaten down flat. Demand - one contrast to last year. Memmonite fields ploughed, or over with corn to 2' high, irregular. Very dusty roads. Obvious drought. We descended into Mestizo canyon & saw, under small oak on grassy hill, 2 *Lepus gairdneri*. They ran together, showing much white on side toward us as they zigzagged. We drove toward Rancho Mestizo. Saw 1 Booming Nighthawk flying among oaks, & later 3 more; 2 perched in oak trees apparently very rusty. Near corals, saw chips numerous & grass about 1/2", when present. In some areas, rows of *Lupinus* about 3' tall, near corals, as if eaten by cattle.

Specs.

21 June 1969

2 mi. up canyon from Mesteno Hq.

shot Empid. fulvit., ♂, t. 6 - formalin

singing; most present in pine.

G.P. recorded song at length.

Mesteno, 1 mi. N. Cabaña - shot

spec. 6/21 Vireo solit. atop oak; earlier in pines -

sang whistle . 17 gms., t. 4 + 1/6 TR.

~~4/22~~

Fve - 23 bats, Mesteno, formalin

6/22 pickup wolf skull, lynx skull; C. varitas.

spec 22 June - Junco hyemalis, Las Varitas, some fat.

spec 23 June - D. auduboni 13g. ♂ t. 4x7, sl. fat. iris dk. br.

spec. " (Vireo belli 16 gms., t. 6 no - disc.) iris br.

6/23 pickup wolf skull, Ojo del Venado.

Journal

Mexico.

20 June 1969

Rancho Mesbeño, Sierra del Nido, Chihuahua,

Horned Larks in ggs. to 30⁺. At large muddy pond, ^{C.} Kingbirds, ^{W.} Bluebirds, Lark Sparrows, Acorn Woodpeckers, + a few Mockingbirds - on ground or in trees (oaks). Also Killdeer, Violet-green Swallow, 1. Many of smaller oaks are leafless, or partly so, or leaves brown, as if from drought. Then W. Bluebirds 6⁺, Shrikes 3, Sparrow Hawk 2, House Wren 2, two Scrub Jays, Flickers, before reaching cattle guard at ranch entrance. Then 2.4 mi. to ~~Mestizo~~ ^{Mestizo} headquarters (altitudes 6900 + 7200, about 7000'). We talked with Baiza, then drove 1.6 mi. up canyon to above a large pond next to lava-boulder slopes. 2 Diary Duetter on pond. (We found 2 or 3 single eggs on the shore). Camped at 1800 near pond. Saw 2 Martins go into hole in dead pine, 40' up; 2 others perched in same tree (nest?). Hundreds of Rava pipions along shore of the pond. We set up mist net near shore and soon took Eptesicus, 2 Tadarida, + Myotis (formalin specs.). Heard Poor-will and Whip-poor-will in evening.

21 June 1969. Starting 0530 a.m., heard C. Kingbird chorus. Saw ^{photoed; coll. - CCK no. 8919} Buff-breasted Flycatcher (G.P. recorded song + found nest), fledging W-B Nuthatch, Chipping Sparrow, Bluebirds. Wide spaced pines, + some oaks. Heavily grazed here, + no forage left. At Adfiro, Baiza said a bear poisoned not far away about 4 yrs. ago; possibly bones left. Also told us ^{carcasses of} a trapped wolf + a poisoned one in Mestizo arroyo; taken since last October. We drove down to ranch entrance, thence E. to bottom of Mestizo arroyo (.7 mi. to wood gate, 2.6 to Mestizo bottom). Raynal side of fence ungrazed + tall, but matted & dry. Much masticized on Mestizo side. Cattle lean, lookadoosical. Saw Bluebirds, Jays. Route through spaced oaks, piñons, junipers in grassland. At Mestizo bottom, riparian trees, small cliffs - saw Canyon Wren, B-h Cowbird. At gate below cobata, on bare bank above streambed, Cover flycatcher; 10' above ground, in yellow pine.

Journal

21 June 1969

Chihuahua, Mexico,
Mestero Canyon, Sierra del Nido,

George attracted Buff-breasted Flycatcher close, in 15' blue oak by road, with playback of taped call - came to 3' / 2.6 mi. up canyon from initial point, gate to gp. oaks. Talked with cowboys, who said tracks of bears there, farther up Mestero arroyo, & in Varitas. 3.5 mi. up from initial point, last gate below meadow (dry dam) near cabin. In a clear pool, 15' wide, 4' deep, in rocky streambed, 2 aplocheilichthys, about 6 x 8" long. / Meadow green but mostly bare ground, greenery 1/2" tall. Saw junco, Stellar Jay, Robin, Parula or Flicker, W-breasted Nuthatch. Parked in bottom below cabin; walked E. to old MVZ ^{campsite}, where a few small pools (then no water for 1/2 mile downstream). Saw Tamias solitarius perched on low open pine branch, 6' up, over streambed (always damp place?). / Occas. saw a chipmunk. Some white pines had 6-8" dr green pendant cones - a good cone year for there. "White" oaks in bottom and up lower N. slopes (decid, rounded lobes). / Saw a pair of Brown Towhees copulate, twice in 15+ secs.; on ground under pines & oaks, bottom. Western Wood Pewee common, perched on open branches below canopy, in oaks or pines. Many Robins. 3 streaked creepers on one trunk; juvs.? Back at ranch - let down canyon, a boy had fledgling Junco in cage; said he got them at cabin. Chipping sparrow - often 1 or 2 in open. / At cabana (altitud. 7350+7800; call it 7300) Pygmy nuthatch - probe in brown sheath at base pine fascicles. 2 bluebirds shared a chipmunk on the ground. / ^[Solitary?] Cuck heard a vireo in 30' pine, called 7, & collected it (spec.); it also perched in oaks (17 gms, testes enlarged, to 7mm.); near trail N. from cabana, in bottom. / Saw several single Painted Redstarts, in oaks near overstreambed. At foot Varitas canyon, saw a ^[later collected, CSK] Slate-backed junco, with Mexican junco, feeding on ground; bird jumped slightly, but healthy appearing. / 1/4 mi. up Varitas

Journal

21 June 1969

Arroyo Mestero, Sierra del Nido, Chihuahua, Mex.

shallow water in creek for 200 yds., about 2' wide. Saw Hairy Woodpecker on trunk. / We put up 30' bat net across creek pool below the concrete dam below meadow. Subant 3 hours took 23 bats, which preserved in formalin. / In attic of colona, nest of Barn Swallow with 4 eggs. Mud + grass nest in rafters. Two adults + a juvenile Canyon Wren also roosted in attic (G.P.). / We drove up canyon to N, leaving 1100. ^{To} foot Variter, 1.7 miles. Saw 5+ Cave Flycatchers over streambed, alone, in about 1/2 mile. In dust of trail, I saw tracks of a large beaver (4" wide), and of a wolf. About 1/4 mile above the water in Variter bottom, we found dried bodies of wolf + Lynx (sawboys told us of trapping them). Took skulls of both. / Flushed pair Harlequin Quail in 2' tall oak brush under pines, near canyon bottom; oaks + aspens near. Saw several chickadees. Mexican Jays - a group of 8+, including yellow-billed gissinula. Saw a yellow Perisoreus probing among ash leaves + fruits in streamside green tree. / We slowly hiked up Variter canyon to near head, then ascended slope to E. Flushed a large owl - faded brown back with light small spots, & light (whitish) dorsal tail; sailed across slope (Spotted Owl?). / Flushed pair Harlequin Quail in hd. Mestero arroyo, area manzanita + dry (brown leaves) near dry tributary, 1/2 mi. + from ^{known} water. Shot the ♀, destroying ovaries, but she had large white flaccid oviduct, so probably had laid. About 3pm, descending Mestero, saw Townsend Solitaire perched low in pine forest. We found no water (saw one algae filled bowl) in going downstream to fork; then we ascended fork toward Cjo de la Yegua, and soon found pools in bottom. 4pm; Cjo de la Y. - Mex. Jay, Robin, Band-tail Pigeon; water on ground (much tramped by cattle), & in trough. Deep

Journal

[date - changes
last 2 days
remembered. etc.]

22 June 1969

Arroyo Mecoño, Sierra del Nido Chihuahua

shade under big oaks & ash trees. We hiked up to ridge to N., over top, in opening of bunchgrass, then downslope through manzanita (yellowish leaves, no fruit), then low oak brush (knee high, mostly leafless), into pines & to ~~some~~ foot of Varitas, where we camped. In evening, George played back Pigmy Owl calls & we soon had two responding, coming close in pines (though after dark). Heard Spotted Owl " " far up rocky slope to S., but could not attract close. (A possible Thick-billed Parrot nesting tree also up the slope; once saw pair in one stub & tree on an adjacent one, during daylight.) Found many freshly-eaten cone cores beneath a large white pine low on slope (Scirpus?). In evening heard Whip-poor-wills & occasional Poor Will. / Overcast moderately all day, so not unbearably hot. (On June 21, about 85° at colima at midday). Camped - about 7500'.

23 June 1969 Monday. Overcast 9/10 before sunrise; broke up later. In very early morning, in dark, heard apparent owl - " " " in pines of bottom, for only 5 ± minutes. Later, Ceprenidger, & then Stellar Jay "choos". Twice saw a Painted Redstart foraging in pines, on trunks & branches, about 30' up. / Flushed pair of Harlequin Quail, 100' from streambed, in thick brush & very short grass. Called "S-S-S" on ground (where?) then flew in different direction. / Band-tailed Pigeon - 10± above, green, 2 cm. long, in crop of ♀ (ov. + mm.). Collected an Audubon Warbler, ^(?) Bell Vireo, in medium sized tree in streambed area. Common were Robins, Stellar Jay, Flicker, P. Redstart, Junco, Cover Flycatcher, W. Woodpecker, along area of water in stream (200 ± yds.). Saw single Townsend Solitaire, and occasional Band-tailed pigeon in same area. / 1035, departed up canyon to Ojo del Venado, arriving 1100. Large oaks, to 80'; big ash trees, mixed pines, water puddles in

Journal

Mexico

23 June 1969.

Arroyo Mestizo, Sierra del Nido, Chihuahua,

streambed, & water in "caroa" about 20' long. Saw Stellar Jay, pair of Hummers Tanager (in ~~last~~ large oak), white-eared Hummer (or drank in opening, in water-filled cattle track), House Finch. / Above the ojo, a Black-headed Grosbeak or sang. We climbed slope over rocky ground, ^{hunch} grass, scattered blue oak, piñon, to edge of Mesa de los Venados. ^{low on} slope a Painted Redstart foraging on bark of oak & piñon. Some mesquite plants at edge mesa (1200, 8500'), Robins, Turkey Vulture, 2 P. Redstarts, W.W. Pewee, V-g Swallow, Martins, Audubon Warbler (black breast), small Vireo, Flicker, Mexican Jay, Bluebird. Fleeced a ♀ bluebird from 2 stubs, in holes in (nests prob.) [high for sp.?] Saw 2 Pygmy Nuthatches in pine foliage. Saw red or House Finch perched near hole in pine stub. / In rafters of a feed trough roof, nest of a Barn Swallow w. 4 eggs. Saw Mexican Junco, Brewer's S. Tanager, on ground. 1 Curve-billed Thrasher in juniper. A pair of Violet-green Swallows perched near hole in trunk living oak, 10' up. Saw Acorn Woodpecker. Martins perched atop stub. / Mesa vegetation large pines, well spaced, including many snags, some large oaks, large juniper (allegata); ground rocky. Near north edge, mostly pines, & patches of white-flowered Ceanothus. / In ^{head} Arroyo de los Arroyos, almost entirely pines on N-exposed slope; ~~also~~ piñons, junipers, ~~mangonita~~, & mangonita, but mostly bare, on S. aspect slope. / Chipping Sparrow - fed atop Ceanothus bushes. To pass at head of Ojo del Venado, & started down 1510. Reached ojo at 1550. Found dead wolf of which vagueros told me, in streambed 1/4 mile below ojo. Apparently had been poisoned, they said. Hair still on most of body. Took skull (photod head). / At base Ventura canyon in eve, heard Parula's whip-poor-will. Today Erik took Stellar Jay ♀, adult, but ov. not enlarged; his specimen). A Bandtailed Pigeon had ^{ovary} ~~ovary~~ to 4 mm. diam. In eve returned to Ojo Venado, to sleep & listen for owls.

Journal

Mexico.

23 June 1969

Arroyo Mestero, Sierra del Nido, Chihuahua,

On slopes to W. of Ojo, near small cliffs, heard Spotted Owl. George^{P.} recorded some, rather weakly, & played back. No initial response, so tried vocal imitation. Finally 2 owls flew over, perhaps 200' up, calling --- in flight. Soon one or both perched in trees above us. George played back calls, and we soon had variety of vocalizations recorded at very close range. Slept at Ojo, nearly 8000'.

24 June 1969. About 0630, saw Rivoli Hummingbird, ♂ and ♀, and

one drunk in cattle tracks, standing on ground. Also saw White-sand and Broad-tailed Hummingbirds, in openings in canyon bottom.

Also saw Band-tailed Pigeon, Stellar Jay, Robin. / Saw pair of Summer Tanagers in oak brush low on cañon side; one, ♀, ov. 2 mm.; insects crammed stomach. (L.P. said yesterday he saw

Perce & Bluebird chase same insect, nearly striking in air. /

Also at Ojo, Chichadee, Painted Redstart (oak trunk & limbs), Band-tailed Pigeons (perched tops dead trees), Sp. Rufous-sided Towhees. Saw short-tailed jiv. Stellar Jay. / Brown-headed Cowbird - one at tip top isolated dead pine snag. Pair of House Finches at streamside. White-throated Swift.

Madrone - about half leaves red (too dry?). / Below Ojo, W. Bluebirds, Robins, Band-tailed Pigeons, Empidonax (kept shin; in small pine, canyon bottom). / Deer - saw 3, later 2, ascending slope from near canyon

bottom. / Meadow below cabana, George said found nest W. Bluebird w. 5 eggs, in tree hole. / We drove from cabana back toward main ranch by trail. (Madachani)

Nest, Solitary ~~bird~~ Vireo, over road in shady canyon, 14' up in 15' blue oak, edge canopy, 3' from pine; 25 yds. from streambed & pool, 7000'.

Lower in Mestero Canyon, where open & rocky, saw one Cooper Hawk flying over ridge canyon. Then across flattish area grass & spaced oaks, where saw scrub jays, Brown Towhees. Out through Mestero cottonwoods.

Journal

24

~~23~~ June 1969

Sierra del Nido, Chihuahua, Mexico

~~ash-throated Flycatcher~~, W. Bluebird. ^[Upper Rancho Parapetor] Below, saw juv. scrub jay in oak; almost caught it by hand. Saw Raven carrying food in bill. Red-tailed Hawk, C. Kingbird. In area of 2' tall Lupine, 20± Meadow Larks. Horned Larks - flocks 20 to 30 on short grassland going down ^{to} Mestero, lower canyon. Also many Lark Sparrow. Past Conal de Baños, then E. / Over Mamonte Farms, 10± Ravens; saw 1 to 3 C. Kingbirds attack Raven vigorously. / Then down Santa Clara Canyon saw scrub jays (2) in extreme heat. Near rocks saw 1 Say Phoebe (also on road surface), white-throated Swift. / About 4 mi. down, pair of Harlequin Quail walked off road. At top cliffs, saw 12± turkey vultures, at least 2 perched (windy day). / Near Primavera, 6 Brown-headed Cowbirds followed behind saw in field. When drier area reached, saw Mockingbirds, Brown Tanagers. Saw C. Kingbird nest 15' up in isolated oak (G. P. said 1 nestling, + 10 more eggs). Arrived Campaña camp about 7 P.M. George & Erik set up 30' but net across water trough among trees near cliff - by 2230 they had nearly 100 bats (preserved in formalin), of several species, including Myotis, Antrozous, Plecotus, Eptesicus. / Heard Bar-wills.

25 June 1969. Windy night, clear morning. A few Cliff Swallows apparently starting nests on 50' cliff. Saw Mockingbird, C. Kingbird, Vermilion Flycatcher. Yesterday saw Blue Grosbeak up canyon about 1 mile, & an Irish Dove at big cottonwood by adobe houses up canyon. / We departed for Chihuahua. Saw Meadowlark near Caratero, and 2 white-necked Ravens in yard near restaurant, atop finestraps. Occas. saw 1 or 2 on way to Chihuahua City. Saw burned areas in pasture, but may have been accidental. Toward Chih., proportion of mesquite increased until nearly solid cover. About 20 mi. N. of town, saw Swainson Hawk and Ferruginous Hawk (windows under

Journal

25 June 1969

C. Chihuahua, Mexico

wing tips; near-white base tail). In town purchased supplies, talked with Damian, picked up Gene Christman, who had flown down. Left about 5 p.m. & drove N. to about 6 mi. N. of Km. 92, then turned off on small sideroad toward Laguna Cucumilla, drove through mesquite to grassland, & adobe house of Sr. Gutierrez. (MVZ men had camped there in previous years). Talked with the old man, who remembered ^{A.E.} Powell well, & camped a few hundred yards S. of his crop field, in mesquite. Lake shore about 1 mile to E. Saw Meadowlarks, Shrike, Roadrunner. George P. said saw Black-necked Stilt, Yellowthroats, & Black-crowned Night Herons near lake. Large areas of Sporobolus grass clumps, mainly brown. Toward lake, Distichlis increased to pure stand. Various patches of Juncus. Some slightly raised gravelly peninsulas bore mounds of Dipodomys or Spilomys, to within 1/4 mile of shoreline.

Go Laguna, Chihuahua, Mexico

26 June 1969. Windy night. Saw Killdeer, Snakes, ^(?) W. Meadowlark.

Many large Sporobolus clumps, mostly brown & dry, dominant cover. Patches of Juncus. Occas. grass. mesquite. Dry flat playa-pans. Distichlis much. Sporobolus, increasing toward shore, & finally pure stand near shore, all green. On lake, many coots - perhaps 100 in 1/2 mile. 2 killdeer at shore. Redwinged blackbirds - ♂ and ♀ 50 yds. apart in reeds, but not apparently stationed. Deer duck hen swam with 4 tiny feathered ducklings. Another with 8 smaller ducklings. 3 single small grebes; conspic. white sides, riding high; Podiceps? W. Meadowlark - 4 atop fenceposts in 100'. In isolated 20' willow, Western Kingbird, 4, ^{and on wires} ~~not fenceposts~~ Singing Redwinged Blackbird, Vermilion Flycatcher. In small planted field, corn about 2' high. Saw white-throated Swift flying among big cottonwoods. Near house, Blue grackles, & in big cottonwood, Orchard Oriole. At least two

GMC
joined

Journal

26 June 1969

Ojo Laguna, Chihuahua, Mexico.

open water holes surrounded by tall reeds. Good water in one spring. I saw caught a Pleurotus bat in rafters of old adobe, & Isutierrez daughter caught a Myotis near house (both ^{out} in ~~also~~ formalin). / On way out to Carateros saw a juv. Pyrrhuloxia, Mockingbird, Scalped Quail. / We took road to Providencia ranch by tra. Saw Mourning Dove, Mockingbirds. Black-throated Sparrows on shrubs, roadrunner (one with baby cottontail, 50 gms., in bill). Saw several pairs Scalped Quail, & occasional single, but no young. W. Meadowlark. Black-throated Sparrow carried a grub in bill. Pair of Pyrrhuloxiae. In a cobbles about 7' high, about 10 nests of cactus wren, new and old appearing, perhaps none in use (photos). Arrived in compound of ^{Providencia} ranch headquarters. Fortin's had left; Roberto Mendoza now boss (copied). In building rafters saw Barn Swallow nest in rafters, with 2 young; another nest on mud of wall, & one on a door. / Saw 2 adult Bullock Orioles in cage; men said they had ^(in yard tree) a well grown young about a week ago. Three grackles nests in a mulberry tree; young out of some nests. / a Western Kingbird on nest in fork 20' up a 25' cedar tree in yard. House Finch nests; young in one, had fledged in another. Another nest w/ Kingbird, 20' up in fork Oriental syzamore. / One man said a fish called ^{moreja} moreja in reservoir Los Terrenos, about 8" long, & taken with hook & line. / We drove across plain toward Rancho El Rido. Much burned, making evenly spaced Dipodomys? mounds conspicuous, about every 50 yds. / In Opuntia, Cactus Wren nest with 2-3 young, with pin feathers; 4' up in bush, nest of grass. / To Adfite. in Cañon del Rido, then 1.4 mi. on up C. Las Varas. all water concreting, & cattle out on plains. Cyperus - occur. one in canyon bottom to 2' diameter. Saw Acorn Woodpecker, Mexican Jay (several near house & below?). Walked starkly up C. Las Varas. Cave (?) Flycatcher, or Hepatic Tanager (on shrub protruding from face

Journal

26 June 1969

Cañon del Mido, Sierra de Nido, Chihuahua.

of cliff.) Saw 2 juv. Stickland's Woodpecker, full grown, on oak trunk, started up from near bottom of trunk. In rocky canyon, a gp. of parrots flew over spaced 2, 2, 2, 3, 4 = 11. Saw 2 Black-headed Grackles in top cypress over streambed, both in ♀ plumage. Much Tillandsia in the canyon; on cliff faces, oak branches, acatillo stalks - perhaps why place in Sierra del Nido (= damp?). Saw 2 Myiarchus tuberculifer in dead oak by foot of cliff, 60' up. 1500. Saw 3 juv. Mexican Jays in gp. Spotted Towhees - sent + saw one in canyon bottom. 1 Black-headed Grackle on acatillo. A few Band-tail Pigeons. Found several small water holes in bottom at one site. Water full of algae and dozens of heads of Lizard Frogs. Birds comparatively numerous near the water area. Saw Black Phoebe by water. About 1530, started back. Saw gp. 20+ noisy parrots flying over. Erik said that for a time a large group perched in a pine halfway up cliff. Heard Caprimulgus at night, + a small owl which called ----- George record screech, apparently of Barn Owl in cliffs. Campsite faces (to N.) 200 ft. red cliffs, w. many holes. When we arrived, D. P. had seen antelope deer (?) go up slope below cliffs. Carolee said a big reservoir over ridge to N. of us (area of Las Frescos?). One said a bear had been killed on the llanos by a truck, + that the skin [not checked out.] was at Providence Headquarters. They also said that coyotes had killed several calves (?) on the plains. They knew of coyote owls that lived on the plains in "tuzas." Said snakes on plains, but rattlesnakes scarce now. Hot day; clear, but some wind.

27 June 1969. Erik and I left 0700 to explore Canyon La Higuera for bear sign. Streambed up completely dry; no cattle. Flushed 1 Harlequin Quail bottom. Saw 1 Stickland's Woodpecker on pinon bark. Acorn Woodpecker, on dry slopes below cliffs where acatillo, and

Journal

Mexico

27 June 1969

Cañon del Nido, Sierra del Nido, Chih.

pinon
Opuntia. Pair Harlequin Quail among rocks, short grass, small oaks, 50' from dry streambed. Saw Mexican Jays, Baird's Pigeons, Canyon Wren. 10± Violet-green Swallows milled about at mouth of a large rock cave, as if feeding Spotted Towhees. A Red-tailed Hawk perched on a cliff; a Mexican Jay perched above, dove low over boulder, perched again, + repeated 4±x. At each dive, Red-tail opened bill upward + gave screech. Saw a Scrub Wren foraging in cypress branches. Often saw an Ash-throated Flycatcher. Many bird calls heard (by Eide) in area fresh "yucca" flowers (purple + yellow), and a hummingbird (kind?) fed there. 1 Spotted Owl flew down canyon pursued by 8± Mexican Jays, closest well behind it. Owl then perched in cleft of cliff. Bush-tits (5±) and Chickadees (2) in cypress + pine in canyon bottom. In bottom, mostly silvery-leaved oak, but also modane, Limber (? - 2" cone, 3" needle) pine. Cypress on to about 7500'. Often saw or heard a Canyon Wren, + we caught a juvenile fledgling. In daylight, a Poor-will called in canyon. No juveniles or Stellar Jays, perhaps too dry. 1010, we entered mouth of highest rocky canyon, leading SW. Canyon Wren on shady oak trunk and adjacent boulder. Douglas Fir to 2' diameter. Spotted Towhees. A shady canyon, where I saw bear sign last summer + fall. 1 Sharp-shinned Hawk carried prey in claws, over canyon, high. Series of sapsucker holes in ash trunk. 1 Saw many fresh cones of cones, mostly under yellow pine, some under Doug. Fir. Saw pair of Hepatic Tanager in silvery-leaved oak in canyon bottom. 1 Yellow pine to about 20" diam, 100' tall. Some cone cones of green cones; some obviously dismantled on ground, leaving piles of scales. None of the Gambel Oak (deciduous) seen. In shady upper

Journal

Chih., Mexico.

27 June 1969

Cañon del Nido, ^{Sieria} Arroyo del Nido, NHead of
C. Higuera

part, about 7000', saw 5+ Steller Jays including two short-tailed jays. Horse flyer bothersome even here. / At 1115, arrived where two 20' boulders form an arch over streambed; still no water. Found no lean droppings or sign in area. Started back 12:15. Clear; fair breeze; very hot. Over streambed, a 4 Summer Tanager, alone. / In silvery-leaved oak, 20' above streambed, White-eared Hummer, Chickadee, Vireo (eye ring; yellowish belly). At yucca flower, a hummer fed (tips outer tail feathers white). / Back to ranch house for water, & looked in old mine tunnel for bats (pile droppings, but no bats). House below tunnel (uphill from main house), had bat droppings in a few spots (night roasts). On porch of other house, exposed on bare slope, about 35 nests of Cliff Swallow, at least 12 having fledglings; also at least 4 nests of Barn Swallows, at least 1 with 2 nestlings, 1 with 4 eggs. (One of these in a room, w. broken window. At ranch house where people living, lower on slope, saw other nests Barn Swallows on rafters where emerge from adobe & roof; at least 1 with 2 nestlings, another with 2 fledglings perched alongside. / We moved camp to 1.8 mi. from house, up Cañon del Nido (near Keyhole Rock). There saw White-eared Hummer feeding in oak, & Cassin's Kingbird. Near camp saw 2 Harlequin Quail. 07 called when trunk trunk, 2 see - 1 see, while on ground.

28 June 1969

Cañon del Nido, Sieria del Nido, Chihahua

Departed 0640, alone, for Sierra crest via Turkey, setting altimeter at 6000' at start. Heard Harlequin Quail (1 or 2) flush from short grass slope among shrubby oaks. Saw White-eared Hummingbird in oak by trail. 6500' (indicated alt.), an occasional mesquite, cypress, in canyon bottom.

Journal

28 June 1969

Cañon del Nido, Sierra del Nido, Chihuahua

Trail up
Tiradero

Limber pine to 80' tall; large ponderosa pine. Flushed Bandtailed Pigeon near
 streambed (Canyon bottom about 200 yds wide); stick nest (of this?) about
 20' up in oak. 0720, 6500'; trail crossed creekbed to E. Bottom 100 yds. wide.
 Limber Pine + silvery-leaved oak. Saw group 6± ad. and juv. Mexican jays,
 chirping. Rufous-sided Towhee. Scott Oriole sang in dead oak top; g b d
 & g b V (Black hd. + bib; yellow wing bar). Big hummer (blue-green
 Leucis? in oak by trail, 3' up) 0745, 6700' red-faced wackler foraged in
 twigs + foliage of silvery-leaved oak. Soon after crossing creek 3rd time, to E, I
 squawked for birds under big silvery-leaved oak and a ♂ Coppery-tailed Trogon
 came + perched under canopy, 50' from me (wide canyon open + rocky here).
 At 7000', "ponderosa" pines stand, about 80' tall, + seed in canyon bottom,
 now narrow. On slope to W, piñon scattered, dominant. Mexican jays, Rufous-
 sided Towhee, or Hepatic Tanager near trail in bottom of draw. Large
 "ponderosa" pines frequent. Pair of Bandtailed pigeons flushed from near nest,
 15' up in oak on trunk. Saw first cone cone, or of ^{pine} ~~oaks~~. ^{pair} ~~oaks~~.
 Rufous-sided Towhee. 0815, passed large canyon ^{branch} ~~branch~~ entering from W.
 big boulders washed down; rock face reddish. 0830, heard Coppery-tailed
 Trogon calls from side canyon when rock outcrop, oak. Chaw-chaw-
 " in series of 5. Some small pines had 6" needles in fascicles of 5
 = ?), 7200'. Three parrots flew over + perched on top of 100' yellow pine,
 when they probed w. bills at cones. Bunches of needles of cut branch tips fell.
 A few others joined feeders. I walked under tree + clapped my hands, &
 they remained, feeding + squawking. 7500', first Douglas Fir, about 18"
 diam., 80' tall; also seedling tree. Many 4" long green cones w. scales
 on trees. Some squirrel cone cone below. Again, call of Coppery-tailed
 Trogon, Chaw repeated 5-6x at 1/2 sec. intervals, slightly descending in
 pitch, about 8 pines. There about 200 yds. up pine slope to E. of

Journal

Mexico.

28 June 1969.

Cañon del Nido, Sierra del Nido, Chih.,

streambed. 7700', last apparent "Limber" Pine. By trail near streambed, occasional shrub of Bumelia capulini, with a few 5 ^{mm.} green fruits. Saw gr. Mexican Jays, Flicker, Cover (2) + Western Wood Pewee. Yellow plover in bottom to 18" drain, 100' tall. Finally saw a Stellar Jay (requires water?) (but ~~no~~ water apparent). No Tillandsia in this canyon! Canotum shrub in white flower; same as on Mesa de los Venados. 8445' 8400', draws of head canyon start. Large patch of 100+ aspen, to 25' tall, on slope. Saw Jays, Reform - sided Towhees, 2 Red-faced warblers in pine + Quercus rugosa foliage + twigs. Occas. oak + Douglas Fir; about 20% crown cover of oak. A few white pines to 80', with long closed cones, + some 10' seedlings. 1000, started up last slope to ridge, thru low oak brush, madroño, manganita, scattered oaks + pines, rock slides. (Doctylus ? sp.) Occas. cut-grass clumps. 1035, at rim, 9100' indicated (perhaps 200' too high). Pine needle floor under 18" drain. yellow plover. Saw 1 Townsend Solitaire in pine, low. 4/10 cloudy on S. side of peak. Q. rugosa shrubs, W. Bluebird, Hairy Woodpecker (fed small pine trunker). Chismon. I descended branch of head Mesterio arroyo, where a horse trail, searching for water (thru last Oct.). at 8700', goshawk perched 100' from me in pine and called gah-gah-'''''; 50' up in pine (photoed). As I descended, he flew to other perches. I saw the nest, 50' up in a flat fork of thick pine branch, next to bottom of draw, essentially open about 200°. Much whitewash, but no food remains under. Occasionally adult gave a whistle call. I descended to 8500'. Bird followed me 200 yds. beyond nest, then left. Found no water, so went back up past nest. I was beyond + level with it on slope before adult returned to perch 25 yds. from me + call loudly. Apparently at least two large white-downy young in nest, with some large black feathers. As I continued away, second adult perched near me; the two in similar plumage, + both gave the alarm gabs. / Saw Jays, Mexican Jays.

nest

Journal

20 June 1969.

Crest, Sierra del Nido, Chih., Mexico.

at 8750', on SW slope, some juniper & piñon. Big stand of manzanita near trail crest is yellowish-green & has little or no fruit. I looked for bear droppings, when found in October, but found none. | Started down Terodero canyon, checking altim. & trees on way. 8500', foot of arroyo. 4 panote atop a snag, calling. 8000', start "limber" pine. 7400', large Douglas Fir (lowest?). 1450, at red-rock fan bench to W. Windy, hot, with occasional small clouds. | 7000', still "pandora" pine. Acorn Woodpecker. Empidonax? (gray breast, yellowish abd.). 1510, heard chau - chau ... of C. t. Trogon on west side of stream; I squeaked and a ♀ flew into oak 50' from me. (on way up)
This was only 100' up trail from site where seen this morning. | 50' arroyo started about 6800'; few "pandora" pine below. At last creek crossing, 6600', a Strickland's Woodpecker on dead top small oak, canyon bottom. 1535. Arrived camp 1620, 6000'. | Erik & George had searched for Cottin Bluebirds tentatively reported by Gene, w/o success, & also failed to see Blue-throated Hummingbird seen by George on yesterday, near pools in C. Las Varas. But on their return they had seen a black bear, brown in color, about 50 yds. distant, in mid-afternoon, near our campsite at foot of Higueras. We all went to look at the tracks, which were fresh & clear in the dust. A small bear, to forefoot ≤ 4 " wide, & hind foot 7" long. Hindfoot showed clear crease from side to side across center of pad. Bear had come out of rocky streambed, walked up dusty trail, & fled upslope into brush. Definitely no hump, or grizzly-shaped head. | We went to headquarter for water, then drove toward the road to Providencia ranch house. Near mouth of canyon we saw fly from ground a fair sized long-tailed mostly white bird, bill short, right half of tail black. We stalked it & flushed it 3 x, but failed to collect it. Fairly obviously a partial albino brown towhee, apparently normal in behavior, but not paired.

Bear

Journal

28 June 1969

Chihuahua.
Rancho Pravencia, Sierra del Nido

A few days earlier a mechanic at Pravencia told us there was an ^{all} white bird near R. del Nido; we had smushed at this. | Went W. from green gate, 3.7 (tall gateposts) mi. to Pajarito gate, then on 2 mi. to entrance R. Sierra del Alamo, thence up C. de la Madera to locked gate, 3 mi. from gate. | Near mouth of C. del Nido, below house, saw a White-sided Scrub Jay (3 or 4 saw it). Also, 11 parrots flew over, going toward plains as for evening feed, high. Scrub Jay along this foothill road, starting near del Nido ranch houses. On plains en route saw 3 Sparrow Hawks, (usual Horned Larks, Meadow Lark, Lark Sparrow). And we flushed a pair of Scaled Quail with 5+ checkers, downy & tiny. But pin feathers of under wing about 1 cm. long. When parents flew, chicks disappeared as if by magic - some went into mounds burrows, which were partly crammed with dry weeds. Hard to catch - dashed from bare cactus to catclaw, etc. 1/2 mile after turning off on C. de la Madera road, flushed 2 Harlequin Quail, where mostly grass & only scattered shrubby oaks. On way to gate, flushed about 4 more pairs. In eve, 2 Booming Nighthawks flew over, high, but booming. Heard Poorwills (no Caprimulgus) in eve. Camped at gate in oaks on dry rolling grassland. Cañon de la Madera

29 June 1969. Sunday. Heard Poorwills call early morning. Kingbirds noisy. A flock of 27 parrots flew high over. Walked up canyon to old campsite at trough, about 2 mi. "Pink-tan" shrub here. Willow brush, oak trees, blue oak, silver-leaf oak. Ungrazed. Saw 10+ brush-tits in oaks. Campsite about 7100'. Some long-leaved yellow pine below. Chipping Sparrows near. Went up side canyon to W. Found no water. But found 5 bean droppings, all dry & hard, 2 being of brown-furred manginita type, & two loose & black. Heard Copping Trogon call from dry hillside, w. oaks, rocks. First note usually shivered up, b c, then go a for a series of 7 or 8 reedy "chow"s. Perhaps last summer.

Journal

México.

29 June 1969

Rancho Providencia, Sierra del Mito, Chihuahua,

I thought some of them were turkey calls. Saw Bandtailed Pigeon, Brown Towhee, Chickadee, Bandtailed Pigeon. Trogon followed along hillside, as if following me. Christman looked up main canyon. Then all back to gate, & we headed for Mojiva camp area. Along road saw 2 Citellus spilosoma on mounds in dry grassland. Also Meadowlark, Brown Towhee. Then edge Rinón del Alamo headquarter, then M. thru a ranch (Plan). Mesquite, Catclaw, 50% grass + forbs. Pairs of Scaled Quail seen along road, Mockingbirds. Occur. Chilopsis bush, or area of Ephedra bushes. Rancho Plan had cottonwoods, 3 windmills, large houses. Saw C. Kingbird there, & Barn Swallow in yard. Beyond to N., thicker catclaw, then tall mesquite zone. Oriole, Kingbird, Mockingbird. Passed thru layer, dappled, Rancho Los Varas where Inca Doves, Grackles, Barn Swallows, Cliff Swallows, House Sparrows. Got water. ~~Cape~~ Then on N. Mesquite large at first, then mainly Ephedra and grass. Rather barren as approached Carretera. Turned W. on paved road for 5 mi. Then turned S. on ^{Mojiva Camp} Mena Mojiva road (good dirt + gravel road). About 4 mi. on, beginning of 4' Larrea area. 6 mi. from road, reached the line of 30' walnut trees (dark green, shady) where MVZ gps. camped in 1961. Mourning Doves, C. Kingbirds, Scott's Oriole. About 50 walnut trees, deep green foliage, to about 40', spread over area about 200 yds. Long + 40 wide, across the dirt road at foot of a steep rocky slope to W. This slope bare cactus, ^{ocotillo, mesquite} shrubs, & some Andropogon; very dry & desert appearing. On E. side of cottonwood walnut (which grew at edge of flat bottom), a zone about 100 yds wide of bunch grass (Sporobolus?) about 5' tall. Some of it burned off; some mixed with a little mesquite. Bordering zone to N + E was open mesquite shrub, with heavy dog grazing between. This last area had some Dipodomys mounds + tracks. Beyond the mesquite, to N + E, zone of Larrea on erosion pavement. Soil square miles of Larrea, but apparently surrounded by other types. I set 15 snap traps on cactus-rock slope.

Journal

29 June 1969

Sierra Mojina, Chihuahua, MEXICO.

Spec.

In evening heard Screech Owl; at my imitation it came close in walnut trees and Erik bagged it (♂ 3908) with .38. Before shooting, recorded call. Later played it & another came overhead, calling (not taken). / Saw a few lots over road thru walnuts in eve, but net failed to take any.

30 June 1969. Saw 2 Lesser Night Hawks feeding over cactus hill slope; later 2 flushed in Larrea, from alongside brush. Heard Screech Owl, Horned Owl, at dawn. Coyotes howled in night nearby. Saw cottontail go down burrow in mesquite grove. Many coyote tracks and droppings. / Snaptropis - bait eaten
CBK 3917

big ants, but took one on rocky slope: ♀, 14 gms, imm.; 183-106-20-18; skull
(lost)

* rough skin saved. / Fresh Dipodomys tracks (large) on dust of mound on bare peninsula in Sporobolus. In Larrea saw 1 pr. Black-chinned Sparrow, & a Cremidophorus. In mesquite, Crisal Thrasher (1), Mockingbirds. Grass (white-winged dove too)

saw other birds in walnuts. / We departed for highway to N; about 3 mi. on, at entrance to Mojina mine, a water "pilon," where we washed. Big tadpoles & a few adult Rana pipiens. Many doves nearby on ground & in mesquite brush, also

C. Kingbird, Blue Grosbeak, & 2 white-necked Robins. Should be excellent site for netting bats. Nearby saw 1 Red-tailed Hawk. Found a large Phrynosoma, on road.
Sp. no. comitatus

/ Drove on to sleepy B. Flores Megan, to get supplies. In town trees, grackles, Lucas Doves, & House Sparrows. / Leaving town to W, bridge elev. road + 0140 ft m., so set altimeter at 4850 ft. (200' higher than since Chihuahua on June 25). To W. of river, rolling country with miles of solid Larrea, it appeared. Just across bridge, we took good dirt road ^{south} ^{side} ^{narrow} along stone work canal. Crops (mostly corn) near river. Big cottonwoods, willows, walnuts near river and road. About 2 mi. on we all (3) saw 2 Chamaeleon by roadside. To W., mainly desert scrub, tho mixed with dry grassland. To E., crops by a river & grassland beyond. About 6 mi. out, reached town of Los Losojos very ugly, with water drawn down about 25' above highest level.

Journal

30 June 1969.

Santa Clara River, 5400', Chihuahua, Mexico

Old high shoreline jumbled w. cottonwood logs. Bottom (dry) stream with rotted cholla + prickly-pear stems. Many dead large trees (cottonwoods?) still protruding several yds. above lake surface. On one of these tree skeletons, near lake center, were about 6 stick nests. The 3 lower were smaller, & on 2 seemed to be sitting a coronant. The ~~one of the~~ The highest nest bore a Great Blue Heron and apparently 2 juvs.; 2 similar nests appeared empty. We saw all at range 200 yds. or so on hot day w. binoculars, so details not clear. B.P. saw a coronant fly from nest tree. Coots - many scattered along shoreline among old partly dead trees; at least 7 in 100 m. Whole lake surrounded by pale brown hills - rocky, w. grass, cactus, & brush. To S. of lake a few miles (10 from Caritena), corn 3' tall in level green fields on river bottom, & area edged w. big walnuts, willows, cottonwoods, & occas. fruit trees. Occas. we saw Mockingbirds or Rock Squirrels. Arrived at spread out pleasant adobe town of San Lorenzo, 13 mi. S. of Caritena. A few stores there, & a few hundred people, apparently. Then drove on about 5 mi. to where road descended to cross the river. The water was clear & running, 8-50' wide, & contained many fish to about 6" long. Banks rocky, sandy, & lined irregularly w. huge cottonwoods (some 6' ft. dbh), willows, walnuts. Some patches mesquite on bottom too. To W. of the green strip, ocotillo, catclaw, rocky slopes, & dry short grass land beyond. Many frogs in river. I found a 6" turtle shell. Saw Black Phoebe, C. Kingbirds, M. Doves, a few W. W. Doves, Bandtailed Pigeons, Mockingbirds, 2 Orchard Orioles, Curve-billed Thrasher, heard "clashing" of Yellow-billed Cuckoos. In eve, Lesser Nighthawks flew over stream. A Great Blue Heron flew over. Heard no Coprimulgas or Poorwill calls. But food calls common. Netted a number of bats over river. Took & released 2 Mourning Doves. After dark a local delegation called (with firearms) to ask what we were doing.

Journal

30 June 1969

(5 mi. S. of San Lorenzo)
Rio Santa Clara, 5400', Chihuahua, Mexico.

But "no habia problema." Kenge entertained with owl voice recordings. No Heliconia within 1/2 mile, but occasional horse or car traffic. River drinkable. We lacked opportunity for catching fish. Mesa del Apache dominated eastern skyline; apparently pine atop that mountain.

1 July 1969. Much morning bird activity. Saw 2 pairs Bronzed Cowbirds on rocky shore, displaying. Killdeer. Pair Orchard Oriole. Bullock's Oriole (1). Pewees on low bare branches of trees. Mockingbird singing. In mesquite patch, saw 2 prs. Scaled Pheasant, White-breasted Nuthatch on big limbs of ash. House Sparrow, House Finch (flocks 20+ feeding bare ground), Barn Swallow. Many Lark Sparrows near or with House Sparrows. Saw small yps. Band-tailed Pigeons in trees. Brown-headed Cowbird (1). In a 25' tall cottonwood, saw a ^{deft young} Tamias ^{or} Sciurus agapae! which allowed approach to 20'. It appeared fresh, healthy, & much excited by my squeaker. (Came down for water or to feed on the Agave? - the acornate now 2 cm. diam. & edible). On a branch over river, 4 juv. Barn Swallows (ad. fed). 7 Mexican Ducks flew 100' over. Blue Grosbeak in mesquite in river. 2 Ash-throated Flycatchers fought in mesquite. A Great Blue Heron flew over, low. Acorn Woodpecker in cottonwood-walnut area. A Curve-billed Thrasher ^{sang} ^{a bare} ^{SKUNK} in oak top; walnut. Found Hog-nosed Skunk carcass. Brown Towhee - foraged at edge water, on gravel w/o cover. I saw a few Java Doves in willows & heard others in cottonwood. White-throated Swift flew over river bottom trees. Ladder-backed Woodpecker (2) in cottonwood. Saw juv. Black Hawk, perched, being harassed by C. Kingbird. D.P. said he saw a cormorant (E.C. also saw it, ^{said} ^{mergamu}-like). Two young men rode up excitedly & asked if we had an "ismo." I said, "no." Then one said that he had seen an animal "muy feo" in a cave a short distance upstream; a "gate monty." We followed them; they rode us across river on their horses 2-3 x. Finally we came to 20' streamside red cliff with some small caves. In one, about

Sciurus

Bobcat

Journal

1 July 1969.

Rio Santa Clara, Chihuahua, México

6' above water, was an adult Bob Cat in full view, huddled against back of cave about 4' deep. Some of us approached to about 20' to take photo; the cat ran out, up the rock, & away. / Rock Squirrel - one ^{atop} 5' bush on rocky slope. (crossing to E. bank, immediately)

We departed for Mestizo. Road wandered about hills, sometimes rocky, with much ocotillo, & other times dry grass. Occasional gates. / About 11 mi. S. of San Lorenzo (on road), we looked down on string of cottonwoods along the river and saw in top of one small group, 6 Great Blue Herons (including 1 or 2 juvs.), 6 fresh appearing nests, & some old nests in ^{dead} top trees. / About 12 mi. S. of S.L., road broke farther to E. of canyon and higher into the ^(out of sight of river) hills, so more grass & less ocotillo. Where boulders & ocotillo, no greenery, I saw 2 Bob Wrens. About 15 mi. S., oaks and junipers, & about 19 mi. S., dry grassland hills with live oaks to 30' high, 1 1/2' diam., along draws. There saw Black-headed Grosbeaks, Acorn Woodpeckers, W. Bluebirds, Brown Towhees, Mexican Jays. Bluebirds, towhees, grosbeaks, fed on open grounds under an oak. Many gates, winding road, & ups & downs; slow going. Canyons with willow, walnut, cottonwood (saw W. W. Pewees, House Finches, Lark Sparrows). / Passed through Rancho Las Animas, the farther N. I reached last fall. Then on to Ortega, & W. to road to Rancho El Mestizo. Saw flocks 30+ Horned Larks on way. Also Lark Sparrows, Meadow-larks. / Drove toward Mestizo Ranch. First oak trees were "blue oak" and in w. thick flat O shiny (on both sides) leaves. On into ranch and camped at Llano. [After bobcat incident, one of the men told me that about 2 yrs. ago some black bear came down to the Santa Clara River]. / Before dark, Spotted Owls started calls from cliffs ^{E.} and by stream from camp; soon they were quiet loudly (gone to feed?). Heard whip-poor-wills early, Poor-wills late. / Put up ^{30'} bat net across stream puddles (mostly dry except for about 2 stretches of about 100 yds.) & took about 20 bats in 2 or

Journal

To Lloron,

1 July 1969.

Rancho El Mestizo, Chihuahua, México.

3 hours. First caught was Plecticus; then few of these, but about 10 p.m. took 5 Plecticus at once. Net took no bats 10:30 p.m. to dawn. Cool clear night. Two White-tailed Deer fled from near spring when we arrived. Everything still looks very dry. Low oak brush w. brown dry leaves, & many oaks on slopes leafless.

2 July 1969. Near Lloron, in canyon, saw Painted Redstart, W. Bluebird, M. Dove, Stellar Jay, C. Kingbird, Flicker, House Finch, Cover(?) Kingbird, ^{Phoebe} Turkey Vulture, C.-t. Trogon. In one flock, Chipping Sparrows, 2 titmouse, 2 lutescens, 2 chickadees; about 12 in all. 10± lutescens in gp. in pine; disturbed by Pygmy Owl call. Hutton (?) Vireo, Brown Creeper. Heard C.-t. Trogon on pine and rock slope; seemed to respond to imitated calls. Sp. of Mexican jays, 10±, including juvs. Saw a fledgling Stellar Jay. Saw a Canyon Wren on boulder near streambed. ^{Walked up Arroyo del Alamo.} Saw C.-t. Trogon at Ojito fork. Found fresh green cone cover of white pine. This pine & Douglas fir had many cones. Saw a squirrel in a white pine; it froze about 4' out on a limb about 40' up, lying close atop the limb. Proved to be a ♀, post-breeding, with no milk at nipple and no ut. scars (ut. horn 50 mm x 4). In flock saw chickadee, titmouse, and lutescens (6± total) in shady canyon bottom; came closer at ^{my} Pygmy Owl call. Red-faced warbler in oak branches. White-br. Nuthatch on oak trunk; came to Pygmy Owl call. Two lutescens flew over. Another Red-faced Warbler. Heard 4 Coppery-tailed Trogons in about 1 mile of canyon, from Lloron to Ojito. Early morning heard Spotted Owl call from camp, & C.-t. Trogon calls too. A net near stream took Chipping Sparrow, Brown Towhee. Along the streambed I saw Chip. Sparrow, Robin, Acorn Woodpecker, Stellar Jay, C.-t. Trogon, Black-headed Grosbeak (or), Painted Redstart. Juncos fed on ground in short grass near water. W. Wood Pewee hunched from low perch in clearing (this bird widespread in habitat, from low to high altitudes; somewhat ubiquitous). Mexican jays - saw gp. 6±, including yellow-billed juvs. Walked up canyon to summit area, then

Do
Change

Journal

3 July 1969

Arroyo del Álamo, Sierra del Norte, Chihuahua

ascended to W. edge of Mesa de los Venados. A band of 8± Chichadees w. 2± Titmice. Band 8± Bush-tits w 2 wrens. Many bluebirds, robins, chipping sparrows. To edge of muddy reservoir. On shore, Chipping Sparrows, W. Bluebirds, Brown-headed Cowbirds (5± near cave). Over water, Violet-green Swallow, Barn Swallow, Martins (also drank on wing). A Turkey Vulture at edge pool. When we first approached reservoir, & were still 200 yds. away, a gp. of 16+ large Turkeys ran N. from (shade?) near pool; then a gp. of 20± ran S. from near the water. No chicken. There were two blinds, crudely made of sticks, near the water. (Bajza said that Juan, a Mennonite, had recently killed about 8 turkeys on the ranch, here & at Llora. He shot them w. shotgun.) On Mesa we saw few lizards, no snakes. A partly overcast sultry day. We descended Ojito - birds very quiet, even near the tiny spring. In the old Sawmill area, saw 2 Red-faced Warblers, Mexican Jays, Stellar Jay juvs. Returned to camp. Looked along cliffs for Spotted Owl nest; found only a feather, but flushed owl from a tree. Also flushed a pair of Harlequin Quail. Clouds increased & heavy rain came up canyon. Not enough to make creek run, but freshened things considerably. Spotted Owl calls after rain, before dark. Light rain at night, but cleared up. Llora

4 July 1969. A C-b Trogon came to stream near our net. Again saw juv. Stellar Jay. Saw pair of Harlequin Quail near Llora spring. Saw 3 White-breasted Nuthatches in ovetree (family?). George reported finding a Poor-will nest on W-aspect slope near camp. (w. 2 eggs) We drove down to Mestizo Ranch headquarters, then to lower cattleguard, and drove toward Mestizo arroyo. E. Saw a Loggerhead Shrike (highest seen? about 7000'). C-b Thrasher. Spotted Sandpiper on ponds. also Disco Ducks on pond 1 1/2 mi. above houses. (chick) Bajza said that he saw young turkeys with 2 adults about a week ago. [high?] Llora 6000 indicated, Mestizo River, 7600' i. elev. We walked 500 yds down Mestizo streambed to old 1961 lower MVZ camp.

Journal

4 July 1969

Arroyo Mesteño, Sierra del Nido, Chihuahua

1961
Lower camp

A few spots drinkable water there. Many silver-leaf oaks in bottom. Cliffs 100' high. Juniper trees. Grass flats. Bottom 50 yds. wide, streambed 20' (Photos). I saw said both Spotted & Great Horned Owl taken here. Pr. of Hepatic (?) tanager in a ^{= ash} riparian tree, edge grassland. A few red-height pines in camp area. We drove on up canyon. Saw a Rock Wren on boulders in dry site. In narrow part canyon below cabin, heard calls of 2 Coppery-tailed Trogon. 1100 ft overcast, sultry. To cabin for campsite. [at Mesteño hwy., saw ad. with 3 fledglings] Barn Swallows in attic now had 4 nestlings (hatched since last visit). Violet-green swallows flying near cabin. Doves roosting & calling in oaks near cabin. Occasional few Band-tailed Pigeons seen. In evening saw a cottontail in scrubby oak 1/4 mile N. of cabin. In evening heard Spotted Owl call from cliffs S. of cabin. Heard Whip-poor-wills in evening. Hunted for an hour after dark but heard & saw no game or owls; very quiet. Set 11 live traps in rocks among trees on slope behind cabin (caught 3 Peromyscus). Put up net between blue oak tree and small pines (caught 3 bats [put in formalin] and a Pygmy Owl between 10 p.m. & 7 a.m. The owl was in net 1 1/2' from dead bat (Eptesicus?) which 5 July 1969. was dead & had punctures in one ear, & bloody ear (other 2 bats alive). Presumably bat owl attacked bat in net. (Kept owl as pet. ^{no specimen.})

Sprinkle last night; cleared after moonrise. Heard C.-t. Trogon calling 1/4 mile ^{N.} S. in Mesteño arroyo. Of the 3 Peromyscus taken, ♀ 187-94-20-19, 6 ut. scars; ♀ 191-99-21-19, 5 ut. scars, & juv. ♂. None saved. (Near cabin, C. Kingbird, Acorn Woodpecker, Flicker W. Wood Pewee. George went up Mesteño to record Cared Trogon. Erik & I went up Mesteño to Samill Flat, where we flushed pair Harlequin Quail from their diggings under shrubs. Ascending a side slope ascending we saw 4 White-Tailed Deer, 2 ♂♂ w. 2" antlers in velvet, doe, & yearling. Saw W. Bluebird feeding on ground. Flock of Bushtits came near. [Near old MVZ camp, saw a Sciurus in small pine, about 9 a.m.] About 1100 overcast, so what threatening. In contrast to mid

Journal

Chihuahua

5 July 1969

Arroyo Mestero, Sierra del Nido,

Cabin to upper m. flc.
600'July of last year, no mushrooms now, nor the red "snow flowers."

We hiked to upper fork Mestero (above O. del Yegua fork), and ascended SNE branch about 1/2 mile to a spring. Found no bear tracks, a water, en route.

Near spring, slopes mainly covered with Quercus rugosa (brown pubescent beneath), about 5' high. Continued on up to gorbawle nest. Young now mostly in dark feathers, with tufts down showing through. As I crossed a rock slab w. no bush cover, adult dove at me to about 20'. Dark, & light rain commenced. We ascended to ruin, at head of tin-aduro trail, to camp (1500' above cabin; about 9100' elev.). Near camp saw Stellar Jay, Juncos, Pygmy Nuthatch (abundant), Brewer's Wren (in many-ants), House Wren, Cowbird (?), Flycatcher, Rivoli (?), Hummingbird, Parrots - to 25 in flock, about sunset. Saw 5 deer in Prugora on slope.

Set 5 snap traps near logs, shrubs, grass (caught 4 mice; Peromyscus - saved 5 or 6 Peromyscus). ♀ (200-108-22-21) skull for identification. A ♂ (181-95) had testes 7x5. (some 20' tall)

6 July 1969 In pine - Q. rugosa zone. Saw gr. & Pygmy Nuthatch in one bunch in pines. W. Bluebirds - perch on stubs. Another oak had lobed leaf, dull surface, velvety feel; shrub to 5'. We hiked up toward summit. Douglas Fir, white Pine prominent; also a "yellow" pine w. 6" needle, unarmed umbos. Rufous-crowned sparrow in shrubs nr. summit. Other flocks Pygmy Nuthatch. Crest 900 ft. above cabin (9900' or less). Parrots perched in trees nr. summit - in 2's or 3's. In top 30' pines, I saw 3 Olive Warblers, one a ♂. Veg. at summit: 2 kinds bunchgrass (collected at 9000'). ^{Large} Pine w. 3-5 ^{grayish} needles per fascicle, 3" long. Douglas fir & white Pine - about 40' to 50' trees. A few bushy madroves. Wild onion: 5 needle, 7" long, pea-green, some unarmed (blunt tip umbos), reddish bark w. scales. The knee-high oak shrub. Quercus rugosa. Heard Redwings, Woodpeckers. Found nest of Juncos under clump dry grass, on N. slope, 2' from small

Jun.
Journal

6
5 July 1969

Arroyo Mesteño, Sierra de Nido, Chihuahua

boulder, 10 yds. from river; about 9300'; 3 fuzzy new nestlings. | Returned to bivouac, then visited quabawh nest area again. Only one adult in vicinity. One nestling now sat up on tarsi, high. | Overcast, & intermittently sprinkling. | While at cabin area, heard C-t. Tanager call from opposite slope. George had recorded Eared Tanager. He played back calls of Spotted Owl, & one answered from slope opposite. He played calls of Pigmy Owl, and one not answered. | A. W. Peave had over about 2 am., but seemed to be developing a broad patch.

Monday

7 July 1969 Drizzly morning. Walked to foot of Varitas & back. Saw pair Harlequin Quail at edge bottom; they ran up oak brush slope. Aspect of bottom ground now green, from recent rains. Another pair Harlequin quail. & zigzagged up slope, calling in bubble bursts. At Varitas, yet another pair at edge bottom. | Saw 2 cottontails at foot slope at edge bottom - did rains make them more conspicuous? or overcast? Chaparral also seen more since rains started. One Quarry 3/4 grown, w. no emb. or scars. | Departed cabin & drove down Mesteño. 500' drop, cabin to point of leaving streambed. On plateau idled much E. of cattle guard, saw Ash-throated Flycatcher, Scrub Jay, Mexican Jay, pair of Hepatic Tanagers, Acorn Woodpecker. | Left ^{Mesteño} ranch via cattle guard & drove S. Mourning Dove, Mexican Jays, W. Meadowlark, Horned Lark, Red-tailed Hawk, Tanager (red), C. Kingbird, 1 Booming Nighthawk. Pines, mainly the 16" 3 needled one (Pampan), down I altimeter set at 7500'. At cabin? to about 6600' level. Oaks ended 6500'; 5.3 mi. below cattle guard. Last crossing Mesteño at 6100'; 9.3 ^{mi} below cattle guard. | Threatening clouds. Bought cheese, supplies. Then drove Paríto Cañon del Alamo. On route saw 3 Blue Grosbeaks, (2 or 3), on flat grasslands near brush (pink flowers). | About 2 miles out on

Journal

7 July 1969

Chihuahua, Mexico
Cañon del Alamo, Sierra del Mido,

plain, a Prairie Falcon landed 50 yds. from us, a Brown-headed Cowbird in its claws. It fed, & when flushed flew only ¹⁰⁰ 50 yds. before landing again, still with its prey. (There are rock bluffs in hills 2 miles to N.; potential nesting sites.) / At Coahuila in heavy rainstorm, which flooded roads, but finally arrived at ranch & talked with Sebastian Barrera. No recent avian experience from him. We camped 1/2 mile above houses. / Up canyon I saw juv. Spotted Towhee. Mexican Jays mobbed an owl (Great Horned?). Few birds out in light rain. Camped there. Saw a few cotton-tails in brush of canyon bottom. / Near the "51" store and in Campanero 51 we saw House Sparrows & House Finches. On road about 2 miles S. of mouth Cañon del Alamo, we saw a Badger dead on road, among ploughed fields near grazing land. / Whip-poor-wills & Poor-wills called at night.

8 July 1969. Drizzle continued all night and until about 0830.

Saw a Curve-billed Thrasher atop an oak. / Sparrow Hawk flew over. (seen)
Several W. Bluebirds seen. / I walked up Cañon Escandido. Saw 2 does walk up grass slope among oaks & magueys. In canyon, F. Lichen, Strickland Woodpecker. Canyon about 100 yds. betw. walls, 100' high, cliffs in some areas. Bottom had juniper, ash, blue oak, silvery-leaf oak, pom-pom pines (to 100'), small-coned pines (3 needles, 3"). On mesa above, open stand oaks about 15' tall, some juniper, one piñon - many Chipping Sparrows, occasional Brown Towhee. / About 1/2 mile N. of camp heard Copper-tailed Trogon calling near canyon bottom. Finally saw 2 ♂♂ in a brief conflict, a ♀ nearby. One ♂ had testis 4 mm (Erik kept it for souvenir). / Scattered clouds now; then heavier clouds again & light showers. We departed Rancho del Alamo. About half way to main road (4 mi. fr. ranch), found a dead Gopher Snake in road, between

Journal

8 July 1969

Mennonite Plain, Sierra del Nido, Chihuahua

two ploughed fields. (Much ploughing today, after yesterday's rain - the first hard rain + good soak of the summer.) About 2 mi. E. of Pinal de Bavor, (Audubon?) saw a small Cottontail in grass near wire fence, on flat rockless range. On to Parapator headquarters, where several black locust trees in yard. House Sparrows present; a pin-feathered nestling dead on ground. Nearby, 2 Gray Ducks dropped in to pond. / Saw a Boat-tailed Grackle by water, carrying hindlegs of a frog (R. pipiens?) in bill. / Drove S. across Parapator Ranch. at one pond saw 10± Mexican Ducks and one Avocet. We saw no gambelii en route. Grass dry but still plenty; not grazed off. / Meadowlarks, vireos, on small high points in grass. / Went to area of 1961 MVZ camp, where there is now a small adobe (which we appropriated for shelter from coming rain). At the rock wall, we saw 2 cottontails; they took refuge in base wall. Saw 1 Blue Grosbeak, a Great Blue Heron flying, Barn Swallows. Hrs. of Mexican Ducks, to 7, flew over bottom, going N. Green flat bottom - grass, planted corn, big cottonwood + willow trees, cattail + rush swampy areas, meete on the east the foot of dry rocky, ^{dry-} grass slope, which leads up to many spaced blue oaks (Q. grisea) and lava boulders. Dry grass rolling hills + cultivated fields to W. of river bottom. George reported seeing yellow-throats. A group of Hereford cattle grazed on green flat bottom. A narrow strip of still water on bottom at edge of flat; the main river hidden in trees to W. / Booming Nighthawks boomed overhead in eve. Saguaros runways in thick grass. / Light rain eve + night.

9 July 1969

Rio Santa Clara, Sierra del Nido, Chihuahua.

Morning 9/10 overcast, calm. ^{B.} Nighthawks fed low near our adobe. Small grs. Mexican Ducks flew by, up to 7 members. On water I saw 1 coot. Many 4" turtles in still water strip. Red-winged blackbirds - occasional pair; I found a nest in cattails which grew in a wandy narrow strip winding thru green

Journal

7 July 1969

Rio Santa Clara, Sierra del Nido, Chihuahua

grassland - 2 pale blue eggs w. brown pencilings one end. C. Kingbirds frequent. Killdeer - saw about 5 in 1 hr. Acorn Woodpeckers - in blue oaks of slopes, and also big dead cottonwoods of bottom. 2 Grackles together. Ash-throated flycatcher - in willow tree of bottom. Orchard Oriole - 2 singles. Mourning Dove - often 1 or 2; found nest w. pin-feathered nestlings only 4' up on a lanky small isolated willow tree; in a 15' isolated willow, adult + 2 feathered juvs. (could fly 50 yds) sitting, about 8' up. Sparrow Hawk - 3 in 1 hr.; bottom + blue oaks. One flock 12 Mexican Duck - flushed no singles; not nesting here yet? Met about 5 garter snakes (yellow ^{dorsal} ~~dark~~ stripes) in 1 hr., in wet green grass. ♀ Bullock Oriole (black throat, wing bar) in isolated 25' willow. 2 Mockingbirds. 3 Flickers - in blue oaks, adjacent willow. Lark Sparrow - on ground, dry grass, near + in blue oaks. / George went hunting + bagged White-sided Jocko rabbit. / Day continued 8-10/10 sunnier, but no rain by midday. / Occas. Brown Towhee on boulders in dry grassland. / Drove west to Mamonte store (fresh meat!), + quesario. Saw ♂ Badger dead on road 1 mi. W. of bridge. River now about 10' wide, muddy. Near store saw House Sparrows on fences. Returning, saw a Savanna Hawk on fencepost, 1/2 mile E. of bridge. Three Turkey Vultures at the badger carcass. Drizzled from 1300-1700. George said he found partly complete Yellowthroat nest, + that he saw quail (sp.?) in dry grasslands near camp. / I looked for birds on bottom among tree willows + cottonwoods 1600-1815. Saw 10± Green-backed Goldfinches, + Yellowthroats (in tree willows), 5± single Little Green Herons, 5± Summer Tanagers (very red ♂; some in yellow plumage w. a few diffuse red ^{blotches} on scapulars; = juvs?). W.W. Pewee 2, Blue Grosbeak, 3± (perch near branches, low, cottonwoods, and on dry stalks tall forbs). White-breasted Nuthatch - 2; on willow trunk. Song (?) Woodpecker (outer tail feathers white), Flickers 2, 5±, including 2 juvs. together, flying clumsily. Sparrow Hawk, 5 - including gp. of 3 juveniles

Journal

9 July 1969

Rio Santa Clara, Sierra del Nido, Chihuahua

in one tree. C. Kingbird - 30 \pm . Grackles - 2 together, glossy black. Red-winged Blackbird - 5 \pm , singles, ♂ + ♀ c. Killdeer - 5 \pm . Juv. robin (speckled breast).
 [= Lesser Scaup]
Scaup duck - head dull black, w brownish area circling posterior half neck; earlier prob. same one seen in isolated pool, so can fly; in estuary w. camp.
Mexican Duck - 50 \pm . Flushed one from swamp among willows, but found no nest. Bewick Wren - one atop willow bush. Orchard Oriole - pr., + 3 \pm others, in low thick willow. M. Dove - 30 \pm ; found 3 nests, all on thick branches of tree willow; one with 2 eggs visible, 16' up; others 10'-12', w. no young visible. Scrub jay - one on bare branch cottonwood. Booming Nighthawk - heard at 1815. Erik collected a Vermilion Flycatcher, said he saw quail (prob. Harlequin, in dry grass area). Evening - many M. Doves flew over bottom in grass. up to 9 - perhaps 50 passed in 1 hr. 2 Great Blue Herons flew over adobe. Red-tailed Hawk - one pursued by 3 C. Kingbirds. [Yellowthroat - I saw 4 \pm in tree willows near fork-covered openings of bottom.

10 July 1969. Rain last night. We listened for 1+ hrs. after dark, but heard no large owls. I took walk in bottom 0730 - 1000. Saw ^{W.} Meadow Larks, Sparrows, Nawles, Killdeer 5 \pm , M. Doves, B-H Sparrows (?), Hummingbird (red. size, [= ♀ Broad-tailed ?]), Black gnatcatcher, ♀ air boat, gray breast dark tail (now white), 5 night hawk, green back = ? (Lesser), Mockingbirds, Mexican Ducks, Blue Grosbeaks, Bewick Wrens, Red-bellied 6 \pm [= juv. orch. oriole ?], 8 \pm (also gr. of 5 in bare top of willow), small finch w. black chin, yellow breast, brown back = ?. Brown-headed Cowbird - one ad ♂ displayed + "gleeks" in front of ♀ a juv. ^{Hairy ?} Downy woodpecker (3). Green Herons (1 or 2, 3 \pm x) Lark Sparrows (usually edge of bottom area). Red-tailed Hawk - apparent juv. in bare cottonwood; 3 Kingbirds dove at it, + pursued it in flight. 2 Scrub Jays same tree. Flicker. Acorn Woodpecker. Pair of Harlequin Quail - in patch of green docks; edge cornfield, w. finch + willow - 300 yds. to oaks. Half-grown Cottontail. Raccoon tracks. H. Quail - flushed pair 20' from blue oak tree,

Journal

Chihuahua

10 July 1969

Rio Santa Clara, 6200', Sierra de Nido,

in dry grass by small boulders. Blue oak had C. Kingbirds, Acorn Woodpeckers, Curve-billed Thrasher (1), M. Dove. / George shot a Yellowthroat, which had 3 empty follicles (3-4 mm), large oviduct, & feather loss around ventral apertures (broad patch starting). / Cike shot a Blue Grosbeak, testis 9x7 mm. Yesterday a Vermilion Flycatcher, t. 4 mm. / I saw Ferruginous (some?) Hawk fly over bottom. Blue Grosbeaks fairly common. / Rain to about 8 a.m., then dry but overcast. We departed for Paragator head-quarters, where we saw a Long-billed Curlew and a Marbled Redstart walking together on short grass. / About 2 miles to E., on road, perched up a large Phrynosoma douglasii on plain grass. Near Campana 51 we saw 1 Swainson Hawk, Turkey Vulture, Raven. We drove on east to head of Canyon Santa Clara (6400', if 51 store 6500'). Scrub Jay above pass, in spaced oaks. Saw a Badger run into hole alongside road. / Descended road. Water running in stream from very head, & road covered with water many areas. Saw no trogons; agave now dried, past flowering. At Premoria, saw House Finch, House Sparrow, Brown-headed Cowbirds (on ground m. comm.). / About 3 mi. E. Premoria, a Bobrunner. In big cottonwood area near ^{adobe} ~~adobe~~ shades, 1 Lucas Dove. An Acorn Woodpecker poked head from roadside tree, where seen about June 24. At Campana camp, no bird on Hepatic Tanager or W. W. Pewee nests previously described, but a Robin still on nest in ash near water. Stream running muddy water, so "springs" muddied. No running water up ^{Noria} ~~Noria~~ as seen canyons. / In evening, heard & saw 3 juv. Screech Owls in trees near camp, perched 5-10' up; caught one in a butterfly net - released. / Heard Poor-wills calling. Many glowing, glittered beetles flying in early night. Heard &

spec.

Journal

Chihuahua

10 July 1969

Cañon de Santa Clara, 5300', S. del N.

saw Hyla arenicolor in clear pool of a tributary.

11 July 1969. Departed 0530 for Chihuahua. Saw Ravens, probably white-necked, on posts & flying en route. Left shotgun with Don L., got mail at Delegación Forestal, stopped a bit, & returned to Cañon de Santa Clara by noon. Rain on and off last night, but none this morning. We departed about 2 p.m. & drove N. To El Hueso, grasslands both sides of road, tho' often much mesquite too. Farther N, some areas of Larrea. We stopped 1/2 hr. on the medanos near San Mateo; many lizard, mammal, & insect tracks. Scalped Quail (C.). Then drove about 2 mi. E. of San Mateo and camped among clumps of mesquite in fine hard sandy area. Saw several Jadrolabites (Black-tailed) and Cottontails within 1/4 hr. there, & many birds, rodent burrows. Heard screech owl call in evening. Repacked for border crossing.

12 July 1969. Continued on to Juárez. No inspection on Mexican side, and none on U. S. side except for live export, for which Christman had a permit. We had to leave that for fumigation and mailing to Berkeley. Visited Thaler's in Las Cruces. Then on toward Berkeley.

End of trip

Specimens: CBK nos. 3901-3918

+ ^{nos.} 4173-4333 (mostly bats in formation)

G.C. - 2 turtles

G.P. - bird skins, donated in 11/2.

C. B. Koford

1969

Catalogue

#4001 - 4172

Peru

Specimen Catalog

1969

Peru

change to 12000'

2 August 25 mi. S. Huaraz, Dpto. Ancash, Peru. [12500]. [Rio Santa Valley]

4001 downy nestling *Nothoprocta ornata* (*brunichii*?) 15 gms. (dead long)
 also parts about 7 eggs in nest.
 Found in nest among bases knee-high ichu on E. slope, green substrate.

4002 ♀ 1st. ov. 4mm *N. ornata* (*brunichii*?) est. 400 gms.
 Crop had about 2 oz. small seeds, 1mm. diam., + 6mm. "onions".
 Shot in evening on flat among knee-high ichu, 100 yds. from stream.

(ovary yellow)
 4003 ♀ ad., ov. < 1mm. *Circulodes* 30 gms.
 along small stream in ichu grassland.

3 August

4004 ♂ t. 3 *Nothoprocta ornata* 280 gms.
 [12 mi. by road from Cotac] [Querochocha Lake]

4 August 4 mi. S. 8 mi. E. Recuay, Dpto. Ancash, Peru, 12500'

4005 ♀ o.n.e. *Oreomanes fraseri* 12 gms, no fat.
 white-checked chestn. br., fernoid? (Quechua trees)
 br. patch (edema)

4006 ♀ 1st. ov. 1 *Amazilia* 8 gms, no fat

5 August

4007 ♀ emb. 2 R 2 L, C-R 23 *Calomys* *Sorex* 166-71-18-18, 30 g.

Under edge granite boulder, surrounded by tall ichu grass, mod. E. slope.

3 August 4008 ♀ ut. sc. 3R 2L *Calomys* *Sorex* 158-65-18-17, 20 gms.
~~*Phyllotis*~~

Rock walls in tall ichu grass, gentle W. slope. Before 9 p.m.

4009 ♀ ut. sc., 3L 1R. *Calomys* *Sorex* 140-53-17-19, 15 gms.

Discarded imm. ♀, 9 gms.; ♀, 10 gms., reprod. inactive; also ♀ 10 gms. imm.
 Rock wall in ichu on gentle W. slope. Before 9 p.m.

5 August

4010 ♀ ut. sc. 2R 2L *Calomys* *Sorex* 146-57-19-17, 18 g.
 skull broken

4011 ♂ t. 7x5 *Calomys* *Sorex* 137-58-18-17, 15 gms.

Thick ichu grass at low shrub at edge streambed.

4012 ♀ no emb. *Oryzomys* 175-103-21-15, 10 gms
 disc. ♂, 8 gms, t. 2; ♂, 10 g, t. 2. [m. Long did ov.]
 Under bushes near streambed; shady, green, damp.

6 August

4013 ♂ t. 11x6 *Phyllotis* *pictus* 217-98-27-20, 52 gms.
~~*Andesmonys*~~

Base of boulder wall on mod. E. slope near tall ichu.

4014 ♀ sc., 1R 1L *Calomys* *Phyllotis* *Sorex* 155-68-20-17, 21 gms.
 lact.

8/19 2 w. Pers. R

3 Disc. ♀ ab. lat. 26 spec.
 Disc. ♀ ab 25 lat. t.; ut. scars 3R 2L.
 Disc ♂ ab 21g. t. 6x3

9
 Disc. ♀ Pand. 32
 ♂ Pa 28
 Disc. ♂ Pa 25 t. 4x2
 " ♀ ——— 28, ut. sc. 2R 3L
 " ♀ ——— 23, ut. scars along; no scars
 " ♂ ——— 21g, same t. 3x2
 " ♀ ——— 19 ut. h. along; no scars.
 " ♀ ——— 15 ut. undevol.
 " ♀ ——— 13 ut. undevol.

= 12 total

Specimen Catalog

1969

7 August 6 mi. ^{WSW} ~~SW~~ Cahul Tunnel, Dpt. Ancash, Peru. 13000'
 loc. tiss

4015 ♀ ut. sc, 2L 2R Calomys sorellus ♀ 154-66-19-16, 21 gms.

Small rock wall in short bunchgrass on low ridge.
Leptasthenura?

4016 ♂ t. 5

23 gms, no fat.

8 August

4017 ♀ 1L 3R, C.R 22 Calomys sorellus 158-69-19-17, 29 gms.

Base of maguey clump on dry N. slope (same rock) near I'echu.

4018 ♂ t. 4. Calomys decottii sorellus 130-57-18-16, 14 gms.

Forward - wren?

4019 ♂ t. 4

12 gms.

9 August Callan, 2 Km. S. 11 Km. W. Huaraz, Dpt. Ancash, Peru. 13000'.

4020 ♀ Calomys decottii sorellus 124-54-18-16, 11 gms.

Shrub at side boulder on mod. slope.

4021 ♀ ut. sc. 2R 2L Phyllotis pictus 202-90-24-21, 46 gms.
 (Red trilinea in pinnae.)

Base rock wall below trail on mod. slope, short grass, 100' from stream.
 sk. 1/4 oss.

4022 ♂ t. 1

wren

11 gms, no fat.

sk. 1/2 oss, f.

Forward

4023 ♀ juv.

19 gms.

[Llaco pampa, Heda. Tascán]

10 Aug. 1 Km. N. 12 Km. E. of Pariacota, Dpto. Ancash, Peru. 8500' [8000' ?]

4024 t. 2 Zonotrichia capensis 24 gms., sl. fat. 1.

Tyrannid

4025 ♂ t. 1

16 gms.

Caprimulgid

4026 ♀ imm.

32 gms., mod. fat.

Short daylight, brush & dry bare ground on mod. slope; saw 4 others in area.

Crested tyrannulet

4027 ♂ t. 2

6 gms, sl. fat.

223-112-28-22,

38 gms.

11 August ♀

Phyllotis magister ✓

4028 ♀ 1a ct. t.

(tail tip broken short)

4029 ♀ p-partum (bloody) Phyllotis andinum

266-89-26-21, 38 gms.

4030 ♂ t. 10 X 5

" "

237-126-26-21, 38 gms.

Faint buffy spot chest. Dark soles feet.

Above 3 all on green-bushy slope between terraces, near rock walls.

sparrow

4031 ♂ t. 1

22 gms.

Specimen Catalog

1969

[Elloco, 8000']

12 August 1 Km. N., 12 Km. E. of Pariacoto, Dpto. Ancash, Peru, 8500'.

Pink, white throat

Brush + rock, steep slope.

4032 ♂ t.i.

Tiny hummer

sl. fat, 16 gms.

4033 sex?

no fat

2.2 gms.

Hummer. (Discarded larger ♂, t.i.)

4034 sex?

mod. fat, 7 gms.

4035 ♀ C-R 18. Emb. 2R, 2L,

Phyllotis andinum

235-126-26-21, 42 gms.

Base rock wall in mod. brush on mod. slope near irrigation canal.

Discarded also: ♂ 32 gms. t. 9x5, ♂ 30 gms. t. 9x6, ♂ 32 gms. t. 10x5, ♀ 22 gms.

ut. undevel.; ♂ 22 gms. t. 4x2, ♀ 20 gms. ut. have clear.

13 August 6 mi. ENE of Pariacoto, Dpto. Ancash, Peru

6500'

4036 ♀ ut. long, dark.
♂ No emb.*Phyllotis andinum*

257-133 (tail tip missing)

255-124-27-23, 10 gms

4037 ♂ t. 10x5, regaining

" " "

263-141-

44 gms.

+ *Tillandsia*

Boulders 100' from stream in dry steep canyon, near open shrubs, cacti, etc.

14 August Mouth of Rio Santa, Dpto. Lambayeque, Peru. 10'

Lizard

4038

"

4039

"

4040

"

4041

"

4042

(a third kind, w. dorsal ridge + black spots, coll. by MK + RH)
Above 5 in rounded rocks on beach, latter sometimes in stoloniferous grass.

←

3 mi. NW of Mocupe, Dpto. Lambayeque, Peru. El. 100'

Isabelo

4043

atop baranca, 9 p.m.; in pure sand.

15 August

Lizard - Teiid - shaker forearm

4044

Teiid - same

4045

Lizard - does push-ups

4046

Lizard - same.

4047

2 mi. SE of Morrope, Dpto. Lambayeque, Peru. 100ft.

Isabelo - in open sand

4048

Isabelo - in open sand

4049

Isabelo - 1' from trunk of mesquite.

4050

Specimen Catalog

1969

15 August $[= 3 \text{ km}]$
 2 mi. SE of Morrope, Dpto. Lambayeque, Peru. Elev. 100'.

4051 ♂ t. 7x4 Paralomys gerbillus 156-71-20-16, 16 gms.

16 August

4052 ♀ lact. tiss.,
 emb. 2R2h, C-R 17mm. Paralomys gerbillus 158-73-19-16, 25 gms.

4053 ♀ emb. 2R1h, C-R 13. " " 170-81-20-17, 23 gms.

skel. only (access. much ant.)

4054 ♂ t. 8x5 " " 160-78-19-17, 17 gms.

4055 ♀ ut. sc.
 2R1?h " " 152-67-19-16, 16 gms.

17 August Above 5 caught mostly at edge Capparis avicinnifolia bushes, in fine sand, in flat.
 12 mi. ENE of Olmos, Dpto. Lambayeque, Peru. 2000'. [Red iron bridge, = Guayabo?]

4056 ♂ t. 8x4 Phyllotis 201-103-26-19, 26 gms.

Rock shelf in outcrop on steep W aspect slope nr. sparse bushes & trees; dry.
 Large teiid

4057

Small flycatcher, yellow breast, blue back

4058 ♂ t. 1 1/2 sl. fat, 7 gms.

Hummingbird - electric breast, red bill

4059 ♀ lgt. ov. < 7 mm. sl. fat, 5 gms.

Flycatcher, yellow breast, white superc. line

4060 ♂ t. 1 sl. fat, 13 gms.

4061 ♀ ov. under. Fuscinus sl. fat, 48 gms.

Gray Tanager

4062 ♂ t. 8 no fat, molting breast; 40 gms.

Lizard

4063

Lizard

4064

Above birds + 2 lizards near stream, lizards on rocks.

18 August Porculla Pass, Dpto. Lambayeque, Peru. 7000 ft.

4065 ♂ t. 10x5 Phyllotis ardens 221-117-26-21, 35 gms.

4066 ♀ ut. under, imm. " " Favit buff spot breast
 186-108-25-18, 18 gms.

Along roadside & imm.; 176-47, 18 gms, int. rudiment.

4067 ♀ ut. horns black, no emb. Oryzomys 200-122-24-14, 15 gms.

4065-6 taken in rock wall in grass near brush on mod. S aspect slope.

4067 atop rock wall in mossy-ferny area near streambed; damp, bushy.

Specimen Catalog

18 August 2 Km. W. Forquilla Pass, Dpto ^{= Píura} ~~Lambayeque~~, Peru. 6500'

4068

Lizard -

4069

Lizard

4070

Lizard

4071

Lizard

4072

Lizard

4073

Lizard

4074

Lizard

above 7 in brush & boulders, some dead trees, on S. slope above road

4075 ♀ ^{ut. bulges} 3 L 2 R, 5 mm. diam ^{chiggers in perineal} Phyllotis andinum 240-128-27-20, 34 gms.

Discarded ♂ 18 gms., testis & mm. long (imm.)

4076 ♀ ^{hgt. emb. or scars;} ^{ut. small narrow.} Akodon 177-82-24-16, 24 gms.

Discarded ♀ 22 gms, ut. horns translucent, inactive

19 August

4077 ♀ ^{ut. sc.,} 3 R 2 L Akodon boliviensis 175-75-22-15, —, 26 gms.

4078 ♀ ^{ut. sc.,} 2 R, 2-3 L. Phyllotis andinum 223-116-25-20, 32 gms.

4079 ♂ t. 8x5 " " 220-121-25-21, 28 gms.

21 Km. E., 7 Km. N., of Olmos, Dpto. Lambayeque, Peru. 2400 ft. ^[= El Molino]
Gekko SV 45

4080

Gekko SV 40

4081

Gekko SV 38

4082

above 3 taken at night, w. heavy pressure lantern, smallest on dry ~~leaves~~ leaves at base of rocky, other 2 & 4' apart on 5' imbedded smooth boulders. All near trees & bushes.

20 August

emb. 4083 ♀ 3 R 3 L, GR 26. Phyllotis andinum 219-114-24-21, 26 gms. ^{52 gms.}

4084 ♂ t. 6x4 " " 206-111-25-21, 26 gms

(Cactus, trees w. bromeliads, on slope.)

Under edge large rock outcrop on dry N. slope, w. bushes & scattered trees, 100' above canyon bottom.

4 mi. SSW of Motupe, Dpto. Lambayeque, Peru. 400' [Cerro de la Vieja]
Gekko - under granite boulder exfoliation, daylight.

4085

Gekko

4086

Gekko

4087

Specimen Catalog

[Cerro de la Vieja]

20 August 4 mi. SSW of Motupe, Dpto. Lambayeque, Peru. 400'.

GCKKO-

4088

4085 taken daylight under granite effoliation, very active. 4086-7 taken about 10 p.m., on side open face 10' + boulders, cold. 4088 taken night on dusty ground near road, bushes; very active.

21 August

Long eared bat

4089 ♂ t. f

67-6-11-13, 12 1/2 gms.

Net. at night, after 10 p.m., area ^{granite} boulders + few bushes.

22 August 2 mi. SE of Morrope, Dpto. Lambayeque, Peru. 100 ft.

GCKKO

4090

Taken on fine sand, small hill, 6' from Cappari bush, about 9 p.m.

23 August 4 mi. ESE of El Espinal, Dpto. Cajamarca, Peru. 2000' [Rio Santa]

Red-brown bat, med.

4091 ♀

Sturnira

66-0-15-17, 26 gms.

Netted after 10 p.m. over edge 3' x 4' clearing on slope above road among bushes, trees.

[E Taulis, Rio Santa]

35 mi. WNW of Cajamarca, Dpto. Cajamarca, Peru. 6000 ft.

lizard

4092

24 August

4093 ♀ ut. horns black, bloody - post-p.

Oryz. rat

278-141-

278-141 30-19, 70 gms.

Troped -

Troped under dead hollow log on ground in damp shady jungle.

Oryz. rat

4094 ♂ t. 13x8

315-164-34-20, 92 gms.

Troped under overhanging roots of 100' tree in damp forest, recently partly cleared under edge boulder, humid forest.

4095 ♂ t. 10 x 6

Akodon

226-106-24-18, 46 gms.

4096 ♀ no emb., ut. h. under.

Oryz. mouse, white belly

212-115-24-16, 24 gms.

Troped among buttresses large tree by trail in humid forest.

Bat -

net near stream, humid forest.

4097 ♀ C-R5

Desmader rotundus

84-0-18-19, 34 gms.

small frog - puddle on road, in humid forest zone.

4098

Hummingbird

4099 sex undet.

No fat, 5 gms.

25 August

Hummingbird

4100 409 ♂ t. 1

No fat, 8 gms.

4101 ♀ no emb. or scars

Desmader rotundus

83-0-17-18, 30 gms.

4102 ♀ ut. sc., 2LIR

Oryz. - white belly, yellowish

138

242-130-25-17, 32 gms.

4103 ♀

Oryz. - white belly

235-130-25-17 31 gms.

These two troped:

Among buttresses & roots of 100 ft. tree, humid forest.

~~24 August~~

Discarded

25 August

Oryzomys ♀ 46 gms., uterine horns clear.

Akodon ♂ t. 8x4, 27 gms.

Specimen Catalog

1969

[= Tadis, Rio Saña]

25 August 35 mi. WNW of Cajamarca, Dpto. Cajamarca, Peru. Elev. 6000 ft.

4104 ? ^{juv.?} ^{indet.} ^{Fl. yellow - yellow line, black head} ^(3 in flock, by road, tall bushes) ^{sl. fat, 9 gms.}4105 ♀ ^{1st. ov. < 7 mm.} ^{Tanager} ^{sl. fat.}

26 August Kingbird

4106 ♂ t. 2 21 gms.

4107 ♂ t. 7x4 235-128-34-18 ^{2f} 34 gms.

4108 ♂ t. 13x7 250-140-24-17, 40 gms.

above 2 at base 100' trees among bushes + strangle fig bases.

27 August 10 mi. NW of San Miguel [de Pallaques], Dpto. Cajamarca, Peru. 9000 ft.

4109 yellow frog - road near grass, bushes, green vegetation, wet.

4110 yellow frog.

28 August 3 mi. N. of Oyotun, Dpto. Lambayeque, Peru. 1000 ft.

4111 Gecko - rocky desert near candlebra cactus, copier bushes, night.

4112 Gecko

4113 "

4114 "

4115 "

4116 "

4117 "

35 mi. WNW of Cajamarca, Dpto. Cajamarca, Peru. 6000 ft.

Green snake - freshly dead on road, humid forest area.

29 August 3 mi. N. of Oyotun, Dpto. Lambayeque, Peru. 1000 ft.

4118 4119 ♀ imm. ^{Phyllotis} ^{amicus} 153-86-21-18, 11 gms.

Base of Copyparis bush, flat rocky desert w. cactus.

[1 mi. E. of Huacaday]

3 August 5 mi. SW of Otuzco Dpto. La Libertad, Peru. 8000 ft.

(buff spot on chest)

4120 ♂ t. 13x6 ^{Phyllotis} ^{andium} ^{magister} 203-89-27-22, 42 gms.4121 ♀ ^{ut. horns} ^{dark - p. parvus} ^{p. parvus - (art. tiss.)} ^{ut. horns} 169-51-27-22, 48 gms.4122 ♀ ^{bloody, unde.} ^(no buff spot) 258-135-27-22, 44 gms.lost 4123 ♀ ^{no emb.} ^{lost} 255-130-28-22, 50 gms.4124 ♀ ^{emb.} ^{2x2x1R, C-R19} ^{Phyllotis} ^{andium} 212-108-26-20, 40 gms.

Discarded: 31 Aug. 1969
(Huacabay)

Phyllotis andinum

♀ 40 gms. 212-108-26-20

♂ 31 gms. t. 7x6

♀ 26 gms. ut. horns translucent

♂ 30 gms. Testis 4

♀ 23 gms. ut. undevel.

Specimen Catalog

1969

31 August 5 mi. SW of Obuzco, Dpto. La Libertad, Peru. 8000 ft.

4125 ♀ ^{ut. sc.} 3h 2R. Lact. Phyllotis

254-136-27-22, 52 gms.

4126

Lizard

4127

Lizard

[area of pass, from Quiruvilca]

10 mi. WNW of Santiago de Chuco, Dpto. La Libertad, Peru. 13000 ft.

4128 ♀ 1gst. ov. 1 mm. Capella

mod. fat, 86 gms.

4129 ♀ 1gst. ov. < 7 mm. Plouren

sl. fat, 32 gms.

4130 ♂ t. 6x3 Akodon boliviensis

165-76-22-14, 21 gms.

1 September

4131 ♂ Oryzomys

178-108-21-14, 11 gms.

4132 Dinca?

, 25 gms.

[Km post 103]

2 September 15 mi. W. of Quiruvilca

Dpto. La Libertad, Peru. 11000 ft.

4133 ♀ no emb. Phyllotis andinum

202-111-26-21, 26 gms.

4134 ♀ no emb. Phyllotis "

no meas.

30 gms.

There above two:

Base of rock & rock and mud wall below road.

as to perches;

no emb; ut. horns

4135 ♀ bloody Oryzomys

no meas. ;

16 gms.

Discarded 4 others: ♂ 12 gms. t. 3; ♂ 11 gms. t. 2; ♂ t. 2, 10 gms.; ♂ t. 2, 7 gms. (some bigger water than above).

Dense site, mossy ground under bushes on slope.

4136 ♂ t. 5x3 Calomys roelleri

156-68-19-16. -

Trail under thick grass near bushes beside water canal.

4137 ♂ t. 4x1½ Grallaria

mod. fat, 54 gms.

Furnaid

4138

22 gms.

3 September

[Tanahual-Huacaday road]

4139 5 mi. SW of Obuzco, Dpto. La Libertad, Peru. 8000 ft.

44 gms.

4139 ♂ t. 5x3 Oryzomys

320-103-36-24, 66 gms.

much lact. tiss.;

ut. elong. &

4140 ♀ vasc. Phyllotis andinum

229-119-26-22, 39 gms.

much lact. tiss.;

ut. bulges

4141 ♀ 3R 2L, 3 mm. " "

247-125-25-23, 49 gms.

4142 ♂ t. 11x6 " "

238-125-26-22, 49 gms.

4143 ♂ t. 10x5 " "

251-130-26-22, 50 gms.

above 5 taken on steep SW slope in brush near boulder, nearest stubble field

on latter only

Specimen Catalog

1969

4 September 5 mi. NW of Pativilca, Dpto. Lima, Peru. Elev. 10'. (Rocky beach)
Lizard

4144

6 September 3 mi. SSW of Paracas, Dpto. Ica, Peru. Elev. 10'. [Lagunillas beach]
Skid only Juv. sea lion - found dead, fresh, on beach.
4145 ♀ (no ext. penis) 960-250-21-37.
Cnemidophorus - taken at edge sea on rocks.
sl. fat, 38 gms.

4149 →

7 September 35 mi. ENE of Nazca, Dpto. Ayacucho, Peru. 10500 ft.

4147 ♂ t. 5x3 Phyllotis darwini no meas.; 39 gms.
Disc. ♂ 18 gms, t. 3 mm (juv.) In spaces under
rough reddish boulders w. some bushes near bottom flat.
25 mi. WSW of Puquio, [= Pampa Galeras]
40 mi. ENE of Nazca Dpto. Ayacucho, Peru. 13000 ft.

↑
4149

4148

Upacathia

36 gms. ♀

8 September 10 mi. WNW of Puquio, Dpto. Ayacucho, Peru. 13000 ft. [= Pampa Galeras]
Flycatcher - white line over eye

4150 ♂ t. 7

13 gms

4151 ♀ ut. ov. under. Calanys sorellus ? 155-80-20-17, 11 gms.

4152 ♂ t. 8x5 Phyllotis darwini 216-105-27-26, 44 gms.

4153 ♀ 1st. ov. 3mm. Anas flavi sl. fat, 3/4 lbs.

9 September

4154 ♂ t. 4x3 Phyllotis boliviensis 196-93-26-21, 32 gms.
Boulders in dry grass, 100' from streambed; bunch grass tall.

4155 ♂ t. 2 Oreotrochilus estella 10 fat, 8 1/2 gms.

4156 ♂ t. 4x3 Phyllotis pictus darwini 216-112-28-26, 33 gms

4157 ♀ ut. horns. clear P. pictus 208-112-26-25, 32 gms.
Disc. ♂ 32 gms. t. 6x4, ♀ 30 gms. no emb. a new, ♀ 29 gms. ut. clear, ♀ 28 gms.
ut. narrow and clear. 4156-7 taken in boulders among tall bunchgrass on slope.

Lizard

4158

[= 3 mi. W. of summit on road]

10 September 15 mi. WNW of Puquio, Dpto. Ayacucho, Peru. 12000 ft.
Flycatcher

4159 ♀ 1st. ov. 1 mm.

V. fat 16 gms.

4160 ♀ ut. clear
lact. triss.

Alcedo jelskiiNeotoma chrysomela

163-68-23-15, 28 gms.

4161 ♂ t. 11x7

Phyllotis darwini

251-127-29-26, 54 gms.

Frog

4162

Frog + tadpole

4163
4164

Tadpole - prob. of 4162, 4163

Specimen Catalog.

196910 September 15 mi. WNW of Pequio, Dpto. Ayacucho, Peru. 12000' [3 mi. W. summit]

4165 ♀ ut. clear

Lagidium peruanum

520-249-88-66, 1 1/2 lbs.

4166 ♂ t. 2

Cinclodes

mod. fat, 27 gms.

4167 ♂ t. 4

Falcoaplomado

On ground near grassy shrubs, rocks. Another nearby.

13 September

Lagonillas, Paracas Peninsula, Dpto. Ica, Peru. Seashore.

Skull only

Albatross

4168

Skull only

Penguin

4169

Spheniscus humboldti

Skull only

Penguin

4170

"

Skull only

Dark gray above, chestnut below & wing lining, + white base primaries. Photoed.

4171

Puffinus SKUA

Skull only

SKUA

4172

SKUA

— End Trip to Peru

→ Nos. 4173 → 4333, Chihuahua, Mexico. Bats in formalin.
11 Feb. 1970 Pearson Berkeley — Born in captivity (O. Pearson's animal)
4335 ♂ t. 10 x 5. Phyllotis 237-122-28-25From: Pucusana, Peru, stock. (for chromosome practice)14 August 1969 15 mi. S. Parasmayo, Dpto. La Libertad, Peru.4336 skull only
pickupDasycyon sechurae13 Sept. 1969 Lagonillas, 5 mi. SSW Paracas, Dpto. Ica, Peru4337 ♂ by skull;
skull onlyArctocephalus

pickup on beach.

4338 ♀ by skull
skull only,Otaria

pickup on beach

4339 ♂ by skull
skull only,Arctocephalus

pickup on beach.

14 August 1969 Mouth Rio Sanja, Dpto. Lambayeque, Peru.4340 skull only,
? sex.Otaria

pickup on rocky beach

End of Peru 1969 trip



C. B. Koford

1969

Journal

Peru

Journal
(To Peru, July 30 - Sept. , 1969)

30 July 1969

Berkeley to Lima, Peru.

Departed via helicopter from Berkeley; to S Francisco, Los Angeles; then departed 8 p.m. on Varig 815 for Lima. Rather crowded unorganized group of passengers, largely Brazilians.

31 July 1969. Arrived Lima airport about 7 a.m. Customs opened nothing. By taxi (120 soles) to Costa Rica 141, Miraflores (San Antonio), where John Davis was staying. There met Davies, O. & A. Pearson, Myrnel Long & Ray Hilborn. Last two, students, will accompany me for six weeks field work. Shopped for groceries, & departed Lima about 1230 on Panamerican highway to north. Past Chancay, could see green hills of Lomas de Lachay, & small patch of woods there. We turned off on road toward Churin about 50 mi. N. of Lima, drove 6.5 miles, and off ^{on} poor dirt road to camp on "dry" side of Lomas - 20 km. N., 6 km. W. of Chancay, about 800'. Overcast w. fog, & occasional light drizzle. M. put out snap traps & net. Ray saw viscacha but shot none. Green aspect to head of this canyon. In late afternoon we saw no birds or lizards, & in evening heard no owls. / Ray thought he heard bats in eve; we put up one net.

1 August 1969. About 4 a.m. I prowled around rocky slopes looking for foxes or other mammals w. light, but saw none, & heard no night birds. Bat net & trap line yielded 0. Departed camp 0800. Drove to highway, then to entrance of Bosque road, & on about 3 1/2 miles. Green forest started about 1000', short, & covered ground about 8 ft. tall (vine like plant mainly) at 1200'. Foggy above 1000', but gradually lightening. Many *Bonaterchia capensis*; a few doves. At lower level of greenery, where no trees, a few *Thryothorus*, and *Geositta*, & occasional flocks small birds. Hundreds of small

Mileage

Cher. - 6 cyl.
Sulimban

July ³¹ 30	Leave Merflaer	1330.7
	Gas - N. of Lima	1332.4
	Cherun Road	369.7
	Turned off	76.2
	Camped - Lachay area	133376.8.
Aug. 1	at Canetura	84.0
	Bosque rd. (km 89±)	85.4
	Rate (2nd.) - turned ^{turned} around	89.0
	Canetura	92.4
	(210 km. to H.)	
	N. - Turn E, Huaray rd. -	455.3
	Osprey pond	63.4
	Ocas. small settlement -	
	many chacras - slopes	07-010
	Cajacay turnoff ^{side trip;}	
	add Bridge BB - (lost 2± mi.) - leave	13.5
	↓	
	Camp - 19 mi. W. Chijuan, 8500'	13516.6

Journal

2 August 1969.

Lomas Lachay →

burrows on one slope may have been of Sciurus. We drove slowly on north through Hualicho to and Patambaca, then off to E. on rd. to Huancan (210 km.). On up this road, where much cultivation of sugar cane - then corn, papayas, other products. About 8 mi. up came to a pond 50 yds. long, w. swallows, hill deer, yellowlegs, Vermillion Flycatcher, and an osprey - this made a few passes, about 100' from us, & plunged into pond. On up road went through 2 or 3 small settlements, where food & fruit for sale. Road gained altitude slowly. Bottom ~~was~~ ^{chocran} green, but slopes above rocky & barren. Few "undeveloped" sites accessible to truck. We went above main group of chocran, to about 2500', and camped in old extension at ^{sharp} bend road. Steep slope, facing W., with shrubs and scattered boulders. We (3) all set traps. I set 30 Mus. specials near rocks & shrubs, some down to edge of a small creek. (Found old human bones under side of big boulder). Hummingbirds and small birds present, not common. Truck traffic & dog barking on into the night (initially clear, moonless). About 9 p.m. I checked 10+ of my traps and took a Phyllotis ^{ardensium} ~~torresii~~.

46° F. minimum.

3 August 1969. My 30 traps held another P. ardensium. One at bare boulder, by dead cactus; other under the red-flowered vine-like bush; both caught by tail, so alive. Ray took one dead, & Myrval one alive, in their traps. About 0830 departed & continued toward Lake Conococha. About 5 miles before the pass, we saw a few spots where one could drive car off road, and ^{nearly} were boulder-bush trapping areas, above 11000 ft. On ~~near~~ Lake Conococha, 60% covered with water plants, we saw 10+ Chloephaga, 50+ castro, 5 Snowy (?) Egrets, 10 Andean gulls, and 20+ ducks.

Aug. 2 - Leave 0800 13516.6
 Old Bridge - 11500' 28.0
 .4 mi. below
 Potential camps. - km 30.5 post.
 " " - can get off road. $\left\{ \begin{array}{l} 29.0 \\ 29.4 \\ 31.8 \end{array} \right.$
 km 31.5 post 31.4
 Conasocha summit 12,760 i.a. 33.7
 " town 535.0
 Sign 4080 m = 12,750 i.a. -
 13,409 computed - next altim. to 13400'
 (0' = 31.75")
 N. - Bridge 46.1
 12800' (0 = 30.75) 53.2 (camp area, 6 mi. E).

7/31 filled up at Lima, - 4 gal.
 8/1 Gasoline - filled up at Palaisea, 13430 - 6 gal.
 8/3 " Catac 13566 - $\left(\begin{array}{l} 102 \text{ person} \\ .73/g \end{array} \right)$

Journal

3 August 1969

Dpto Ancash, Peru

in quick survey. Then we headed toward Huanay. At first, stream (Rio Santa) sluggish, meandering, & grass nearly close-grozed. Later grass (ichu) taller. We walked in it, looking for tenanom, but saw none. I questioned a herder; he said "perdicia" higher up, to E.; also that there were many deer in the slope W. of the road, & many trout in the Rio Santa. We noted many holes in old adobe walls - apparent flicker work. I flushed a snipe by river; saw Circulodes, Sicalis, other small birds. Crossed a bridge 12 mi. from Conacocha. about 15 mi. from ~~the~~ that town, S. of km 340 sign, we took short joint up grassy draw to E., where a small stream & thick ichu; cattle grazing there too. I hunted for Nathoprocta and soon found a nest with eggshells (purplish brown) and a dead chick (not rotten yet!) This ^{nest} about 9" in diameter & tucked between bases of ichu clumps, where grass thick & ground rather damp, w. green short forbs. I shot a Circulodes, & saw Aythya. ^{near} (10.4 mi. by road, S. of Catac) Few rock walls accessible, so drove on to 1967 campsite ^(45 km. S. of Huanay). altimeter indicated 12800' (if Conacocha 13,400'), tho we indicated ^{only} 11,000 on previous trips. Windy, overcast, occasional light sprinkles. We set up tent. Drassy-glaciated mountains a few miles to E. An Indian told me the place was "Pequisalea," and that our 1967 campsite at ^[2.1 mi. by road] Rachacoca, was a short distance ~~so~~ north. He said tenanom abundant in grass, trout abundant but small in river, and many deer in the high hills to E. and W. We labeled locality 25 mi. S. Huanay, 12500', [tho previously gave 11000' for Rachacoca, in 1967.] We put out traps. I hunted 1 hr., jumped ^{No. 4002} a Nathoprocta in dense high grass on flat & bagged it, and flushed another pair (all 5-6 p.m.). The specimen was an adult ♀, which

Journal

ca. 12000'

2 August 1969

25 mi. S. Huaray, Dpto. Ancash, Peru.

had not laid yet. Overcast evening; then clear, & calm. 36° by 9 p.m.

3 August 1969. Partly overcast morning. Frost. 26°F. minimum (1' up).

My 15 snap traps, set in thick soft bunchgrass along a circular rock wall, held 2 Alouatta (holivianae?), which M. Leong put up. I hunted 3/4 hr., shot ^{CBK 4004} Rathopsecta. at sound of flushing & shot, 3 others per-
paired up? We departed about 1030, drove 10.4 mi. to Cator, passed up, & departed on road to Chirin (78 km). Road gravelled, rough. Passed slowly up through wet brown rolling & steep hills. Rock walls; sheep grazing. Cordillera Blanca peaks visible to N. Eventually into a deep valley, near small clear stream, & came to a lake about 1 mile long, bordered on E. by rocky & snowing mountains. (Sign said Corp. Peruana del Santa, Estacion de Aforos No. 3., on 6' square 12' tall concrete tower at lake outlet. A narrow canyon of quercus woods to N., with some lushy trees below. Another wooded area, 1/4 mile down, at S. end of lake. Increasingly cloudy (2 p.m.). Nearly we saw 2 mountain Caracaras on road. A Larus over lake. Hundreds of ^{rainbow} trout to about 9" long within 100 yds. of lake outlet, in clear 5 yd. wide stream. One sampled was full of eggs. On tower, ~~po~~ crude sign indicated 3860m, about 12500' (our altim. registered 13,100). 12 mi. from Cator. I set 29 snap traps in rock walls, and bunchgrass, some shrubs, baiting w/ mixture rolled oats & quinoa. Ray reported flushing a tenison in tall grass on slope, twice. He set out live & snap traps. Myrva set live traps in shrub & tree area. Windy late afternoon & evening. About 1/2 moon. No one bothered us at campsite, tho an indian on horse rode close once. Trout reluctant to take fly in evening.

4 August 1969. Min. temp. 22°F. Frosty. Morning calm, clear.

Journal

12500'

4 August 1969

12 mi. E. Catac, Dpt. Ancash, Peru.

Alodon

We checked traps. I had 4 Phyllotis boliviensis, 2 Phyllotis; Leonq put up all except 3 juv. Alodon. (About 5 p.m. ^{yesterday} ~~now~~ had 1 Alodon in trap; removed. No active daytime. This one taken atop a rock in rock wall near river. / Walked up the shrub & tree canyon, which grew narrower & steeper. Shot 2 birds (^{see} catalog), Myrmelt & Ray had poor trapping luck; 3 mice total. / Yesterday M. walked to far end (NE) of lake & back; a tree patch there. This afternoon she returned to set live traps. / I fished stream for an hour & took 5 rainbows, 5-8", on gray fly. Largest a ♂ w. milt; little in stomach. / From 4 to 6 p.m. I checked & set traps. Took 4 more Alodon boliviensis from my 29 snaptraps live; left it set as before. Set 28 large folding aluminum Sherman traps in ^{old} rock walls near thick bunchgrass, & 29 snap traps near stream (boulders, shrubs, tree bases, tall grass) up the wooded canyon. 1/2 overcast and calm at 7 p.m. Dark at 6:30. / Checked live traps (see cat.) about 8:30 p.m.; no catch. Lower line of snaptraps held 2 Phyllotis, 2 Coromys. About 9:30 p.m., checked about 20 traps Hilborn had put along rock embankment at lower side of carretera; they held a large mouse (Andersomys?) and 3 Phyllotis; removed & reset. We put 10 aluminum folding live traps along this wall. Clear calm night; 1/2 moon.

5 August 1969. About 0230, thermometer 10°F., I checked the traps at road wall; none in 15 live traps, but 3 small mice in the (Hilborn's) snap traps. at 6 a.m., one more small mouse in snaps, 0 in live. Live traps to N. of stream also held 0; lower 29 snaps held 1 Alodon boliviensis (discarded), 1 Phyllotis (spec.), and 1 Coromys. Upper line of 29 snaps held 11 mice: 3 to Alodon (bolivi?), 4 Oryzomys, 1 Phyllotis, 2 Coromys. These all within 5 yds. of streambed in shady



Journal

5 August 1969

Recay
10 mi. E. of Recay, Dpt. Ancash, Peru.

sites. Conomys: 1 under edge boulder, near shrub, tall ichu; 1 base Quenya bush, under cutbank; 1 boulder wall base, mossy, ichu adjacent. Phyllotis: 1 under edge large granite boulder, in tall ichu; 1 thick ichu, base of shrub, edge streambed. Oryzomys (small, long tail): 1 base large tree, mossy green substrate, ichu near; 2 under green bushes, in green sedge + grass; 1 in wet cut of bank, where mossy, green, fern-like plants. Akodon: 3 largest taken in highest (up canyon) traps, in shade by rocks, moss, under Quenya bushes (not boliviensis? - RH #58, #). / Rainbow trout - I took 10+ with fly, including 4 from 8-12". all larger ones were ♂♂ with milt. Others 4-6". Taken on gray fly, fished rapidly upstream underwater. / Talked w. Indian woman. Said this lake = Querococha. Later, man told me there is a tunnel about 15 km. on, that lowest annual temp. - 3 or 4°C., in August (he reads weather instruments here for hydroelectric project), that wet time is January - February, that road here since 1942, this only road Cho Catawara to Chavin. He raises sheep, some cattle. / We put up wire, set traps. I put out 15 snags along each of 2 rock walls on west-facing slopes. Long collected a Bufo (spec.). / During the day, 3 caracaras landed at times within 5 yds. of tent, to get discarded mouse bodies. / I saw 2 Calaptes rupicola, on ground in short grass + rocks. Also big Muscisaxicola w. white outer tail feathers. The chestnut Amazilia common; some fed at pink flowers on shrubs. Saw a Buteo, mostly white below, but near black secondaries. / Evening clear, calm. / Discovered ♂ & ♀ Akodon boliviensis, 20 gms., uterus small. Also ♂, 23 gms., t.b. (Other dissects in catalog section).

6 August 1969. Wind started 8 a.m. My 30 traps held 1 Andinomys, 1 Colomys, 1 Phyllotis, 1 Akodon boliviensis (17 gms., imm. ♀). These at foot boulder walls in ichu, E. slope. Put up specimens. Departed 1120 for the

Journal

6 August 1969

E. of Recuay, Dept. Ancash, Peru.

tunnel on road to Chavin. Saw an Aplomado Falcon perched on granite boulder on slope. Road wound about but went fairly directly up valley w. small stream to Cabul (on benchmark post) tunnel. Valley grassy, slopes rich and granite boulders, and some areas had much queñua mixed with boulders. Sheep grazing, + some cattle. Tunnel about .4 mi. long, thru crest of cordillera, about 4000'. Slight snow on ground at that level; some big banks on mts. above. E. side somewhat drier; steep-sided canyon. We saw a few big rock slides, + found viscacha droppings near base. In shallow pools in green ^{not} ~~water~~ we saw many large (3") tadpoles. Areas of 1 sq. mile of queñua on slopes here too; heard sheep bleating. A few rock walls. Much snow on peaks above road. We saw several yellow finches w. black heads (Hirundo?), flying near road + bushes. Took kodachromes. About 1 mile down road from tunnel to the rock slide. / We went back through tunnel and about 7 miles back toward Queerocha, where we camped about 2 mi. E. of the lake, at about 300' higher level. We are about 6 mi. WSW of Cab Cabul Tunnel, 13000'. A clear 6' wide stream meanders by our camp, on grassland flat in canyon bottom. To N. + S are steep slopes of huge boulders, w. patches of queñua. Lower slopes mostly rich, w. boulders. We set traps. I put out ³⁰ ~~25~~ snares, 10 near rocks in rich, 20 near boulders in queñua jungle. Inside, a tangle of trees + boulders; shady, mossy. Viscacha droppings in many holes under boulders. Ray set on slopes to N.; Myrnel set traps above mine on slope. She saw many fresh viscacha droppings. Stream had small 4-6" rainbow trout, but few. Clear, cold, eve.

7 August 1969. My line of 25 snares held: Colonyx sorrellus (rocks in grass),

1 Onychomys (dark queñua woods near boulder by big hole), 1 Akodon boliviensis

Foot lake Queroscho to Canal Tunnel - 10.6 mi.
12700' - 14000'

Journal.

7 August 1969

13000'
E. of Recayo, Dept. Ancash, Peru.

16 gm. ♀, discarded; dark quenna woods where damp), and ^{entering} (leaving 8 a.m. and noon, on Neotoma). I left snapper set. Put out additional 22 near rocks, low shrubs, & maguey clumps, between camp and lake (about 200' elev. above). There along drainage of the stream, on N-facing slope (again old burning of maguey). Shot a furcoid (spec.), with another on boulder in open grassland. In quenna woods, saw bird all blue on back (tanager?; also on previous occasion, other quenna area). Heard the "click-click" of frog near stream. / Clear all day; windy most of time. An Indian told me this quebrada named Q. Conde (runs toward tunnel). He said deer in higher slopes of our site. / Late in day, hastily set 25 small live traps among boulders, granite across road from camp. Clear, cold, calm evening.

8 August 1969. My traps held Calomys sorellus (maguey trapline), C. sorellus (RH catbox), C. decillur, Dasyglossus, & Abodon boliviensis (old line in quenna), and Calomys in live traps. Discarded Abodon, 18 gm. ♀, no out. or scars, C. decillur (♂ t. 3, 71 gm.); same, ♀, 10 gm., imm. Took a wren in one snap trap (spec.) / Departed about noon and drove to Catac, about 15 mi. Saw an Aplomado Falcon perched on boulder, en route. Then onto Huaray where we stopped. Then up the rather barren slope, along road to Casma, to summit, Callan Pass, about 13200'. Then down 1 1/2 mi. to W. and camped, where Bob Hamilton and I stayed in 1967, Sept. 13. We set snap traps in near dark. Within an hour, Myrval had a Phyllotis pictus. Myrval took one before 9 p.m., at foot of stone boulder embankment near stream. Cold, clear, calm.

9 August 1969. My traps also held a Calomys decillur. Myrval took one Phyllotis since last evening. Frosty ground; minimum temps. about 25°F. I shot a couple of birds (spec.). We put up

Callan - Casma rd

odometer
13 66.3

Summit 13200'± 13300' i.a. (14 mi. from Huaray)
Camp - first rock outcrop, about 1 1/2 mi. down by road

67.2 Bridge at ft. deep narrow gorge, 11200'±. *Tillandsia* on rocks.

73.5 Village - road S. to mine

675.8 Store below road - eucalyptus tree - "Barridos y acites" sign

76.3 - "Esso" sign; gas, small restaurant.

79.9 9300' - hairpin turn at clear stream, green shrubs, eucalyptus trees

81.2 white storehouse + garage by road.

84.- Camp area 8250' ind. alt.

Journal

(to Casma)

9 August 1969.

Rio Pira Canyon, Dpt. Ancash, Peru

1 km S., 12 km E. of Paracasto

specimens. Then drove slowly down road to camp, where I camped July 11-12, 1967 and Sept. 7-11, 1967. This about 21 miles down from summit. Our altimeter read 8250, & was 300' high last check, so about 8000'. On way saw barley being harvested by sickle, worn out in wind. All dirt road; one way with turnouts. / Camp area changed - the flat area cultivated by tractor, though intervening slopes intact. Vegetation very dry - brush very dry & leafless, except in main draw where we had trapped. The red-flowered vine-brush in bloom. Moderate numbers birds. We put out many live traps, hoping to get alive *P. magister* for cytological work. / I put out 12 snap traps near campsite. By 9 p.m. had 2 *Phyllotis* ^{*andium*} ~~*andium*~~, one by rock wall, one at edge maguey clump. Clear calm eve. / In afternoon I flushed 2 single tinamoues, & shot one imm.; 200 gms, M. & K. also each flushed one, so must be fairly common.

10 August 1969. Another *P. andium* by wall at camp. Min. temp. 44°

My 23 live traps held 2 *P. andium*. During day, 30' net took 1 *Zonotrichia*, 1 small finch, 3 yellow small finches, 1 hummingbird, and 1 dove. I put up some of these. Set 23 live traps again, on slopes between terraces, and 33 snap traps in same general area. Shot a finch & tyrannulet during day. / Discarded *P. andium*: ♀, 35 gms, emb. 2 R 2 L, 12 mm C-R; ♀ 23g., ad. uterine, no emb. or scars; ♂ 30g., t 9x6. Tunga fleas in ears (on tail of another *P. andium*). Day warm; no breeze until noon. Clear evening, calm.

11 August 1969. My live traps held 0; snap traps held 3 *Phyllotis magister* (I judge), 1 *P. andium*. Left live traps (23, aluminum) and added 26 small Sherman traps in area. Took up snap traps, & set same 33 going upslope near water

Journal

Peru.

11 August 1969. Llaco, 12 km. E. Paríacoto, Dpto. Ancash, ^(spec)
 irrigation ditch, near shrubs and rocks. Net took a finch,
 a Zonotrichia (released), hummingbird, yellow finch, & dove. 1
 Decided on P. andinum, t 11x6; tunga flea in base tail. others have
 flea cysts in peninae (same sized). / I hiked to head of irrigation
 ditch, a 25 yd. square stone tank about 500' above our camp,
 to NE. Green thereabouts, but saw no unusual animals. No
 frogs or tadpoles in the "estancia." a local told me the area
 here known as Llaco (or before). / I found old tin arrow nest,
 with eggshells, ^{inside} a 10 yd. diameter abandoned corral,
 against rock wall. / Flushed, at 0739 a tin arrow; another
 stayed on ground near my feet for 10 sec. before going (jiv?).
 Warm until noon; pleasant afternoon. 40°F. last night. Clear
 calm quiet evening. Ray shot a big bullfinch. I saw
 Sparrow Hawk during day. Ray saw a group of parrots. / We
 are still trying to get a live P. magister - have about 80 live
 traps out on 3 slopes where have taken in snap traps.

12 August 1969. 40° min. 30 live traps held 7 P. andinum. 56 live traps
 held 2 of same, 1 each in large & small Sherman traps. Myrmal caught 1
P. magister (we hope) in big Sherman trap in same area. Few scattered clouds
 morning. / Departed 1440 and drove down road 2.8 mi. to bridge
 (7600') over clear stream, where many eucalyptus trees. Then down
 past large hacienda headquarters (massive church, aucararia trees
 in yard) to camp 2.6 mi. below bridge, where an old broken bridge
 on S. side, 6700' i. elev. (= 6 mi. ENE of Paríacoto, 6500'). ~~we~~ We set total of
 about 40 traps in rocks (dusty, columnar) of dry canyon ^{lower slopes} ~~bottom and~~
 end green (grass, brush) bottom. Hair mossy here, but water
 good & clear. Heard bats, but took none in 1,30' net. Clear night.

Journal

13 August 1969

To ^{4 N.} Casma, Dpt. Ancash, Peru.

Traps took 2 Phyllotis andinum, w. battears, both very long tailed, in boulders near dry bushes, 1 Phyll. abodon (bolivianus?) in cotton (=ML catalog). Took fine baths in stream, then descended to Paracota (9.4 mi. below camp), Yautan (12 mi. farther), and Casma (25 mi. more) (= 51 mi. below 8500' camp). Then to Trujillo - stopped, ate. Modern town; a little Lima; bustling & prosperous (in contrast to dirty sprawling Chicla). Drove N. and camped. S. of Pacaswayo near hummocks of sand on erosion pavement

flat, w. Capparis shrubs on mounds. Set about 20 traps. Clear air. 14 August 1969. High fog morning; clearing slowly. Took 1 Mus in traps (RH). Lizard tracks numerous. ML found skunk skull (Conopator?). We drove on to about 4 mi. S. of Mucupe, where R. Hamilton & I camped in Sept. 1967. I found 2 fox skeletons. We saw big blue-faced teardrop in Capparis atop sand mounds, & Cremidophorus-like large lizards common on sand of same. We noted that last sametun raised a frenzy & shook it, then the other, as if the animals found sand hot (10 a.m., not hot but fairly clear). We drove through Mucupe & across Rio Santa (little water), then took dirt road to coast at Loguvas. Passed through green brush, corn, tomato fields en route. River ended in a small lagoon. Salt lagoon too, w. many small fish, Larus dominicanus (?), yellow legs, sandpipers. Beach steep, of rounded rocks to 6" diameter. In rocks we took 3 species of lizards (Tropidurus?). I found ^{many} broods of pelicans, dark gray shearwaters, a tern, a Bargainville Cormorant, blue-backed boobies. Road to Puerto Eten said to be very bad, so we returned to Casma on a better road, skirting desert, arriving about 2 mi. N. of Rio Santa. We camped there on erosion pavement near bananas & sand hummocks covered w. large-leaved Capparis. We set traps; I set 40 traps. Hope to get some Peromyscus, in addition to Mus. Many lizard & some fox tracks. Windy, but died about 7 p.m. In evening, ML & I took kerosene lantern & searched sand

mouth Rio Santa to Carretera, about 10 miles, dirt road.

Logueros - cave + mud huts; dirt streets

Mocupe to Rio Santa, 1 mi.

(adam. 13759.)

Altimeter - set at about 13000'; Lake Conococha, checked out 200' at Trujillo (100' high), 60' when estimated 20' high at Pucallpa. Bad gadget!

Journal

15 August 1969

3 mi. NW Moque, Depto. Lambayeque, Peru. 100'

hills for gekkos. We found 2 on branches, 1 atop, 1 at lee edge, & one on erosion pavement. Many odd tracks in sand; some made by crickets, beetles, gekkos, others by ^{spiders}, scorpions (5-80 mm long). M. heard a bat at X.

15 August 1969. My ⁴⁸snaps took 2 Mur (discarded; ♂ 9 gms. t. 6x9, ♂ 16 g. t. 6x4 (stomach worm too)). The others took 3 Mur, no other mice. / Saw on bushes, hummingbirds, small fish. Isorithia on sand, branches. / We shot a few lizards (3 kinds). Strong breeze by 10 a.m.; cumulo-stratus clouds. Lizard w. black dorsal spots & ridge, I saw on branch of bush, 1' above ground. The Cnemidophorus-like lizard shook forearm in air periodically; a display? - ^{ran}walked rapidly short distance, stopped, ran again, moving in jerky fashion. The sandy-backed one (4046, 4047) did push-ups; tamest of 3, and ventured about 10' out from bushes. Apparent lizard hole 100' from mound. I saw tracks of heavy-tailed lizards & one tid w bluish face, sharp nose (about 16" long). Not as rich a site, in herbs, as area 4 mi. S. of Moque. ^{CSK} I saw hummingbird w. 2 long tail feathers. / We departed northward. Soon only erosion pavement desert w. no bushes, except a few to E. just below rocky hills. Increasing disturbance & planting. Took road to Puerto Otter - no Paralouys habits en route. A dirty stick & adobe town, which had seen better days. Then on along coast thru Morogua & Santa Rosa. Last had gaily painted fishing boats on beach, flocks of gulls & pelicans alongside, & a pair of Laysan Terns on sand (red bill, white superc. line). Then on to Pimentel on dirt road (an industrial port), then to Chilays. Shopped & gawked. Then on north to a few km. N. of Lambayeque & took road to W. (just before cemetery on right) toward Moque. Camped at our July 1967 ground. Mostly unchanged, except for extensive digging of sand. We set traps for Paralouys. Abundant "roads" of mouse tracks under Coppelia bushes, & ^{many} tracks of large

Journal

2000'

16 August 1969Rio Olmos, Dpto. Lambayeque, Peru.

mile of shallow stream, I saw about 50 toads, largest about 8" long. Three pairs in amplexus, the smaller greener one on top, larger brown one below. Calling toads sat fairly upright, throat sacs bulging; when alarmed, crouched low, but could be touched without fleeing. Heard no anura caprimulgids. M & L set up a net across stream; about 1 hr. after dark she had a Myotis & Artibeus (?), an hour later another of second - no more by morning.

17 August 1969. Somewhat buggy night, but mostly clear, slightly damp. My trap held 1 Phyllotis; M & L got nothing. I shot Furnarius and a few other birds; many species present. About 1130 we departed for upper reaches of Olmos. No red-flowered trees as in 1967. Passed about 3 small roadside restaurants. Over 1967 camp at about 4400', just before a high concrete bridge. We ascended to summit - sending ed since 1967; difficult to get off road. We set some traps (I set 21 snops) in on brushy slopes, among boulders, 2 km. W. of pass. Then I collected a purple lizard (Stenocercus ?), but cloudy & saw no others. We set up tent on summit, on W. side, by road. (Sign said 2144 m., [7010' I think]. Cloudy & sprinkler; then cleared a bit. We set more traps. I put 15 along stream through grassland, where bushes, rocks, ferns, tree roots. Also 13 near a rock wall (same bushes) in grass, 50 yds. from bushes. Saw a caprimulgid w. white wing bars, white bar tip tail, at summit. Saw over grassland 2 caracaras, turkey vulture. In bushes, mostly Zonotrichia capensis and a black Turdus w. red bill. Flocks up to 30 of Mourning-like doves (no central white-tipped rectrices). Many tadpoles & small frogs (15 mm ?) in stream pools near houses. All much grazed, as usual. Hills generally brushy - much of it thorny. but perhaps 1 sq. mile of grassland just E. of pass (largely new

Journal

17 August 1969

7000'
Porcella Pass, Depto. Lambayeque, Peru.

made ?). Fog rolled in low about dark. Cleared somewhat, later, but then windy - it blew over tent down (we were not in it).

18 August 1969. Still windy. Picked up traps near summit. My 28 held 10 Oryzomys (along creek bed), + 3 Phyllotis andinum (rock wall on slope in grass + thin brush). R + L, using live traps, got 0. Took up our other traps 500' lower elev. on Pacific side. My 21 snare held 4 Phyllotis andinum, 3 Abodon, ^{or} Marmosa, and a large Oryzomys rat (alive). M. + L got 1 or 2 each in live traps. Evidently the boulder + plant jumble on slope is a hot spot for animal life! I shot several lizards there, of 2 species. We then set up camp on a point about halfway between summit + 2 km. W., where good view down the Olmos (valley smoky). About 4 p.m. we set out traps. M. + I trapped same slope, 2 km. W. of summit, going higher than before, putting out about 65 snap traps. Ray set small ^{Sherman} ~~Acme~~ nearer camp. In half dark, I saw that one snap trap had a catch already; I picked up the trap lying the string, fortunately, for it held a hairy spider w. body over 3" long! No rain this afternoon, the low clouds about 4 - 5 p.m. Overcast evening. We put out a bat net after dark, on a dry ridge near road. Heard bats but saw and caught none. Cleared after dark.

19 August 1969. My 34 snap traps held 3 Abodon boliviensis and 9 Phyllotis andinum. Windy morning. M. L. caught several of same spp. We drove back toward Olmos and stopped to camp near ^{Molino} ~~Ch. Molino~~, where big Ficus trees shaded rocks and stream flowed clear (many 4" fish in it). Stopped but did not camp here in 1967, 21 km. E. + 7 Km. N. of Olmos, 2400'. Mainly grey throated brown-backed Kingbirds in Ficus. I shot a ♂ Vermilion Flycatcher.

Journal

Peru.

19 August 1969.21 km. E. of Olmos, Depto. Huancabamba,

(M.L. catolog). Drier, than on previous visit, in 1967, but two birds of lizard evident (as at red bridge camp). We set about 22 snap traps each + put up 3 nets - but little catch in them. M.L. got 2 coerebids in net, + R H some Artibeus. In evening I hunted gekkos among leaves and rocks near camp, and found 3 in about 1 hr. M.L. also found one (see catologs). Pleasant calm bugler (almost) night.

20 August 1969. Picked up traps; the others blanked, while I got 2 Phyllotis andinum, on rock shelf under outcrop 100' above valley floor on N-facing steep slope, near scattering ^{brush} + open trees. ♀ about to give birth. Probably few birds breeding; no response to squeaks. A large ^(or Furnarius) weaver gave loud descending calls near creek; somewhat like ^{canyon} canon like eastern weaver calls, but more raucous (white throat, red-brown; weaver?). Put up specimens, cleaned up. Breezy, nearly clear, + pleasant in shade. We drove down Olmos valley. About 2 1/2 mi. below red bridge we saw a 3' long dead stallion across the road, then run into brush. Continued on to Olmos (just off main road) for a few supplies; a working adobe small town - one of main industries was cutting mesquite firewood, selling charcoal. Then on S. to Motupe, + more supplies. Much local propaganda about the Milagro del Cruz de Chalpon! (at night, the mile of road winding up to the cross was lighted all the way). We continued across river + a few miles S. to foot of Cerro de la Vieja, where we had looked for gekkos in summer of 1967. We set up 3 nets near foot of hill. M. + I set traps over, about 20 snakes (mine set in dark). I worked at prying off granite slabs for about 1 1/2 hrs. before getting a gekko - it was very active, on E. side of hill about 5:30 p.m. - and came off rock w. the slab. Much evidence sheep or goat grazing on the hill. Many candlebra cactus, + leafless grotesque trees. A statue of a woman on S. summit of the hill. After dark

Journal

20 August 1969

Peru. 400'
Dr. Mo Cope, Dpto. Lambayeque,

we searched for gelchos among boulders w. pressure lamps. M. & I. got about 7 smallish ones, some on ground, some on boulder faces, all fairly active. Later I got 2 large ones, cold, on large rock faces, about 5' up, & a small one on ground; also I saw 3 more small ones, too active to get. Plenty of gelchos here, of at least 2 spp.

21 August 1969. We each had our bat, of same long-eared species, in our net. M. took an swim. mouse (spec.; probably *P. amicus*) in traps, while I got 0. We drove on to Jayanca, then tried to find road into the desert to W., toward La Muela. Roads confusing, and we went about 4 miles on one winding between log, shag sticks, & barbed-wire fences, vineyards, & other crops, probably toward Morope - but did not find the track into the "despolado" to W. Hot & dusty. Often saw *Furcraea* along roads, or an ari. We returned to sanctoria and went south to Morope, then searched on road leading W. Various obscure branches. We wound up on one leading north to Tocume, too through chocra, goat-grazed mesquite, "tingja"-making groups of people, & occasional patches of desert. Of last, mostly erosion pavement on sand, & little pure sand. We turned back through Morope & camped about 2 mi. to E. near former site (this time getting stuck in sand, while trying to reach sand hills). Windy, but we set up 100 ft. net atop low sand hill. Mymar set about 20 ^{snap} traps; plenty of mouse & lizard tracks. I worked on car problems. We spent an hour about 8 p.m. looking for gelchos, in 1/2 moon light, windy. M. & I each found one (specs.)

22 August 1969. Mod. high fog morning. We awoke M. had 7 *P. gerbillus* in her snap traps. We extracted car, drove to Chiclayo, & loaded up on supplies & repairs. Then hit south to Rio Santa, & started E. toward Hida. Oyatun, searching for Taulis. Much sugar cane & at least two

8/22	Leave Chiclayo	14310	
	Leave Carotia PAA, to E	334.2	
	Board to N., on Oyster	62.	?
	El Espinal	74.2	

Journal

22 August 1969Up Rio Sana, Dpto Lambayeque, Peru.

mills in ~~low areas~~ ^{flat bottom}. Harvesting now. Road skirted green zone, w. rocky desert, cactus, above it. Oyster also in green sugar belt; we passed N. of this town, however, & took a fork to N., toward Florida and Tauris (after various inquiries). Saw two large reservoirs in this low country, bordering rocky deserts. Then road skirted the green low zone, sugar cane, then more rice paddies. Also bananas, papayas, & later tall bamboo grove (& cut) by road. Valley bottom gradually decreased, & bushes, then trees in on hills. Through small settlements, such as Pan de Azucar, & Espinal. Adobe & stick buildings. Road one-way, dirt, w. rare turnouts - no place to camp. Pushed on 5 mi. on road beyond ^[in Dpto. Cajamarca] El Espinal (Monte Sano, ^{and} Florida, farther up) and camped by roadside Rock hills, trees to 50' feet some of bromeliads, rushing water, tall bamboo, the smell of tropical cloud forest. Bushy & cactus undergrowth. We put up one net in clearing (by 7 p.m. it had a Pygmy Owl, which we kept alive). ^[Escaped in morning, after photographed] M. & I set out about 30 snaptraps near bushes & rocks in damp canyon. Overcast & threatening; locals said rains hard at night, but rainy season about January. Fairly buggy too, humid, warm. Camp 2000' approx.

23 August 1969. Light sprinkle at night; 9/10 cumulo-stratus in

morning. Snaptraps held 2 Mus only. Net had fine large bat (CK spec.), taken after 10 p.m. We headed on. Crossed Rio Sana on bridge, 2 mi. above camp, where canyon walls steep & cliffy. Then on up road - rocky, muddy in spots; often hit rear bumper, dented, or gas tank; would have stopped had good camp spot been available. Through La Florida - more sticks & mud, but some supplies available. Then on about 3 miles to Lirivinto, about 4000', where coffee bushes commenced. Road

Journal

23 August 1969.Up Rio Saña, Dpto. Cajamarca, Peru.

increasingly bad, & averaged about 5 mph. Watched often at estate of sugar mill. Many small clear streams, & jingly patches near them, between crops and second growth. 7 mi beyond Florida, road neared Rio Saña - rushing, much white water, 10 yds. wide - and there were a few flat unpopulated sites for camping. Only .8 mi. farther, however, we arrived at the huge white ranchhouse of Taulis. It & associated garages, shops, deserted, but 3 girl children of caretaker in adobe nearby (no adults at all). Scenic campsite near house, but we went on .8 mile, to where road turned uphill to S., & good open grass near trees & streamlet for camp. No signs of habitation there, & view of waterfall of Rio Saña, as well as another thin higher one to SE. / Overcast & threatening. We set mouse traps, put up ² nets in clearing. I set 22 traps along trail leading to Saña waterfall. Heard tinamou calls; sot la, 2 notes; could not see it, though close. Saw two large iridescent green-backed birds, probably trogons, in tree. Few small birds evident. Some trees about 100' tall stand far above general vegetation, showing former cut. Also much area planted to a peculiar tree w. much dissected leaf, planted in rows, often w. coffee bushes between. Across canyon of Saña, forest appears to be much above our level, about 6000'. / Drizzly rain mid-afternoon, sometimes uncomfortably wet.

24 August 1969. My 22 traps held 1 Alouatta, 2 large oryzomys, & a small one (spec.). Net held a Desmouter (specimen). At night we heard frog making noise like two hollow sticks striking together, but were unable to find the animal. M. & R. got some Alouatta only. I reset traps. Talked w. "guardian" of Taulis, who was friendly. The house built about 25 years ago - now in sad repair, the for

Journal

6000'

Peru.

24 August 1969

Hada Taulis, Rio Saño, Depto. Cajamarca,

some furniture + people can stay there. Oover (deceased) had 3 species of trees planted for wood, including casuarina. Much clearing about 18 years ago. He said road went over mtn. to S., to ^{Cajamarca} Cheper. He also said bears here, + "leoner" (smaller than puma, not spotted). Water in small canal N of Rio Saño went to Saño, he said. Usually people bring a letter from owner in Lerma, to stay at Hada. (house?). We each put up a second mist net. Hunted birds, skinned mice. Morning rain, sometimes sunny. In late afternoon we rigged two nets near houses at Taulis. Only 2 trucks used road all day. Rain on + off in afternoon. Tinous called early morning, + evening, but saw none. About 5 p.m. saw a tayra (?-mustelid) run across road 1/4 mile W. of camp. / About dark my traps held an ^[dissected] Alodon, + a hummingbird was in one ^[CBK 4099] net (spec.). Drizzly evening, but calm.

25 August 1969. No rain night, but all overcast by dawn. We had set two nets near Taulis houses, but no bird catch this morning. Saw droppings or sign of bats around buildings. Carsten said that recently a ^{"juice"} fox, size of dog, had taken two of his turkeys. My 24 traps held: Alodon (under edge boulder), 3 red-brown Onychomys w. white belly, 1 gray Onychomys. A net along single trail took a Desmodus and large hummingbird (CBK #100). / I saw a roven-sized bird w. black body, much white ^{proximal} distal half of tail (= hawk?). Sky still threatening at 11 a.m., but no rain yet. Shot an iridescent green-backed tanager. / Set 17 snap traps, some baited w. mouse meat, near trees and logs in forest. Set 2nd 2 steel traps, 50 yds. apart, in area where saw the "tayra" yesterday. Rain on and off from about 2 to 6 p.m., never very hard. I have 2 nets out; so have M., + R. M. also set 10 traps near boulders near pasture near Taulis buildings, to see if Phyllotis there. No rain at night.

Leave Taulis camp	148 92.1
Road w. to Summit	98.8
Camped-	109.0

Journal

26 August 1969Heda. Taulis, Dpt. Cajamarca, Peru

My traps held 2 Oryzomys (specs.). Nothing in 2 steel sets, or nets. Took all up. Shot a kingbird in tree-planted area forest. Rain started about 9 a.m., & rained ^{lightly} on and off during day; no clearing in morning. Fog from 1000' ^{below} rose & engulfed us. Took in all gear & departed about 1500, up the mountain. Road switchbacked up through cloud forest & patches cleared ground, w. rare houses. 6.7 miles above camp, side road to a sawmill. A local told us we were still on Heda. Taulis (German owner, killed in plane crash). He also said most rain January to May, drier in June. He said road goes on about 2 hours to Cruzalme, where turn off to Chayen. Road narrow one way; increasingly muddy as rain continued. We were almost stuck several times. Humid forest continued, though more cleared areas, grassy, & more houses (stick & thatch; sheep raising). About dark we stopped in road to camp & let road dry out; stopped raining about then. Many good bird hunting sites along this route, & traffic almost nil (car or horse). Camped at about 9000' elev, about 17 mi. from previous camp. / At one point en route, a mine tunnel went straight into rock about 100'; saw no bats or guano therein. / Bat net at road made no catch, tho I saw at least 2. No rain at night; cleared.

27 August 1969. We pushed on in mud, with some help from locals; road still muddy from yesterday's rain, but sunny morning. Two boys came by w. string of 14 rainbow trout, 8-10" long, which we bought at 1 sol each (33¢ for all 14).

Road improved somewhat. About 2 1/2 mi. beyond our camp, a road took off to R, toward San Miguel. It was grass covered, w. no sign recent travel, so we took road to L, which had track head marks. This descended in switchbacks, about 2 mi., to the Rio Grande, where joined by the Casacilla (stream). Perhaps 50 people living in area, tending long-haired sheep. A man said to be an hour farther along the road. Trout in stream and two small lagoons. Then we had mired road to San Miguel, and

27 August 1969.

Hida. Taulis, Dpt. Cajamarca, Peru.

only way out was back up the hill (^{muddy} muddy road, impassable to us). The people & country pleasant, but no forest patches near. After talking around, M. & I decided to hike back to Palmito, about half way to our Taulis camp, as this was locale of only truck in the region (Don Manuel Aguilar, administrator). We hiked back two hours & talked w. farmer, who informed us road to San Miguel very bad, but offered to lend us horses for trip to Palmito town on m. We returned to our car. Little rain today. No rain at night.

28 August 1969. Overcast morning, slowly clearing. We tried road up slope. Made it about half way after great effort, with help of school boys to put brush in mud, & push car. M. went to the ranch to arrange for horses to Palmito; I saw joins her. Ray stayed w. car. Soon after M. & I reached the ranch, Ray arrived in car - 4 young men w. shovels had helped him over the last bad curve. Good much drier today. We saw one carden soaring close. We drove back toward Florida. Got stuck on a log bridge, but finally on, past Palmito, & down to Taulis and to La Florida. Passing a bulldozer towing an air compressor, coming up the narrow road, provided diversion. Fogging at 7000' and below. Went on down road to camp near Oryzomys on rocky desert w. 2 kinds of caespit bushes and an odd squarish candelabra cactus, to 15' tall. Set traps. Heard bats in evening. (spec.)
M. & I ^{searched} ~~searched~~ for geckos w. pressure lamps about 2 hrs. and got 14, mostly on the rocky ground near base of big cactus. One was on the cactus trunk, about 2' up. All same species, I think. The Half overcast calm evening. I picked up freshly run-over green snake on road above our Taulis camp, about 6500' (spec.).

29 August 1969. My 15 snap traps held 1 imm. Phyllotis arizonae (spec.). M. also got one. Mine near base of oval-leaved caespit bush. M. & R. collected a few lizards. Hummingbirds (brownish, white breast) common, as were mockingbirds. a large finch sang loudly (not collected). Tracks of large furred big cats, and M. and R. collected some of smaller spp. Departed about noon and drove to

Journal

29 August 1969.

To rr. Pacasmayo, ^{ha} Opto. Libertad, Peru.

Highway ~~at~~ ^{near Mucuna}, then S. About 4 mi. S., visited campsite on road to W. where R. Hamilton and I stayed in Sept. 1967. Appearance unchanged. Surface of sand is very coarse sand, or tiny pebbles. Many big and small holes, but windy and mouse tracks covered. We continued on S. and camped about 1/2 mile E. of road at edge mesquite & low brush area, bordered by sticking brush fence; same camp as used July 14, 1967. Vermilion Flycatchers, Mockingbirds, & many small birds here, but windy. Nests of thorns, & of mud, in mesquites; apparently not recently in use by females. Wind decreased evening. I set 15 snaptraps. We put up 3 mist nets for bats. In evening, M. & K. hunted geckos on rocky bare hills to W. of camp and took 7 of fair size.

30 August 1969. Nets took no bats, 2 birds (M.b.). My 15 snaptraps took 0. M. got a rat (Oryzomys?). We drove on S past San Pedro de Lloc, on area of sand dunes, a road up to main wave tower in hill, & S. of there, in region km 630, many sand hummocks topped w. cactus bushes. Shopping & tire repairs in ^{Trajillo} ~~Trajillo~~; start of a fiesta (Santa Rosa?). Then off on road inland toward Huancabamba. Mostly dirt road from the start. Small towns along the way. In one we waited 1/2 hr. while group of people, singing, carried image of virgin 1/2 mile to chapel. Dry canyon - cactus only at first, then Tillandsia, then shrubs. We went about 40 miles to 4 miles past a small village, then up a side road (sign said Huacaday 6 km) where we camped near slopes w. oat fields, boulders, and shrubs. All set traps. I set 22 snaps + 7 live traps by bushes, rocks. Found nest of Notopipra under overhanging stone in patch of brush; egg shells still present, unweathered. We are 1.6 mi. up Yanchual - Huacaday road, & junction is 2.2 mi. below Otuzco - Huancabamba jct.

Journal

31 August 1969

La Libertad, Peru. 13000 ft
To: 10 mi. WNW of Santiago de Chuco, Dpto.,

My snaptraps held 9 Phyllotis, most or all P. andersoni. I put up 5, discarded juven. ML took 11 mice, including apparent P. mogeti and some Akodon boliviensis. Ray got 4 P. a. We put up specimens. I collected 2 lizards on rocky slope of oat stubble field. Then drove toward Otuzco, crossed river just after junction, then on through Palapampa, ^(8 mi. from jct.) 8500'. Much planted eucalyptus; land heavily grazed and planted. Dry aspect; 5 mi. beyond Palapampa, ^(sp?) again crossed river - dirty yellow color (mr. km 89 post). About 7 mi. on, mr. km. 100-105, Pasture, patches of brush, some rock outcrops and walls - prospective campsite, and still eucalyptus (about 10,500'). 20 mi. beyond Polla p., again crossed yellow river. Much sign mining, + extensive mine buildings about 4 mi. on, at Shorey (Northern Peru Mining, Inc.). We took branch toward Santiago de Chuco (54 km.), not going on 6 km. to ~~Quirivaca~~ ^{ruja} Road wound up through open rolling grassland w. few rock outcrops. 7 miles from Shorey, we saw seed snipe, & I shot a Capella + plow. Also saw frogs in clear stream. Some Distichlis growing here. Cold, overcast, + some hail. 2 miles on to highest point, 13100' by our altimeter. We camped about 1/2 mile down S de Chuco side & set traps near boulders and cliffs. I set 22 snaptraps. About 9 p.m., an Akodon ^(spec.) boliviensis caught. Overcast night, light breeze.

1 September 1969 My traps held 1 Oryzomys (spec). Others took Calomys, Phyllotis pectus. Saw and heard flicker near rocks. Grass here heavily grazed, mostly 2-3" tall. No frost last night. We drove 4 miles toward Santiago de Chuco to high point where we could see snowy mts. of Cordillera Blanca to S. Most mountain in distance looked black. Then back toward N. about 2 miles, to peak

Journal

11,000 ft.

1 September 1969

To 15 mi. W. of Quiruvilca, Dpto. La Libertad, Peru

up 2 frogs in small stream (M.L. spec.). Then back to shore, down to yellow river, & on to Km. 103, about 15 mi. W. of Quiruvilca, 11,000'. Mud and rock walls near road, planted 60' eucalyptus, brush & wet ridge areas to S. of road. We set traps. Good water in canal. Downslope toward river 1/4 mile, some areas of 2-5' tall ridge on wet ground. At edge & in surrounding brush, many ranogways with occasional dumps of pale greenish droppings 15x5 mm; like little ranogers. Guinea pig? I set some snares there, and 2 steel traps. Set 24 snares in all.

2 September 1969. Cool overcast night. My traps held 2 Phyllotis (walls), one Calomys (thick grass), and 5 Oryzomys (mossy area under brush). Others took Phyllotis. I shot a Bellaria in eucalyptus. Saw Colaptes, furber, furveria. Frog eggs and tadpoles in canal. Departed about noon, to W. 7 1/2 miles to bridge, then 4 1/2 to Agallapampa (some supplies available). Down 7 1/2 miles to another bridge, up .6 mi. to Otuzco jet., and on 3.7 mi. to Yan-Tayakual-Huacalay road. Campsite 1.7 mi. up road. We went on 1/2 mi. further, but more cultivated and cultivated, so camped! old site on road turned. Set all our traps, hoping to get live P. mogister. I set 33 live traps, 22 snares, from road to ridge 500' (alt.) above. Saw 3 Nothoprocta fresh from brush on high slope.

3 September 1969. Rainier cool night. My traps held (live) 1 big Oryzomys (spec.), 4 P. andium, 1 Ahodon boliviensis, and (snares) 1 ak. bol., 12 P. andium. M.L. had a dozen or so P. andium and Ahodon. She saw a weasel near her live traps in morning. Clear warm day. Put up specimens. Took in all traps. Departed about noon and drove to Tumbillo, about 45 mi. from our sideroad junction; slow, dusty, cobbled road. Jabs in city, then departed to south and camped about 32 mi. S. on rocky desert at foot barren rocky hill. R.H. took a gekko on flat after dark.

4 September 1969. Drove S. through Chimilote, Casma. Stopped at rounded boulder beach. km. 200 post, 5 mi. NW of Pativilca, & I took a lizard (spec.). Then

Journal

4 September 1969

1000 ft.
To Lomas Lachay, Dpto. Lima, Peru.

on to Lachay, km. 89, where hills to level of road (1000') and even lower were pale green. There were 20+ small camps of goats here, + flocks of goats on the green slope. There about Km. 110. Area greener than in ^{on} early August 1, - first such green barren hills we have seen since Trujillo. We went on to Churin road, up it 6.3 mi., + off on track to backside of green lomas, where had camped August 1, and in 1967. Hope to get *viscacha* specimen. From this side, green herbage (including large oxalis) extends more than halfway down slope among cactus and boulders. We set a few (6) steel traps near *viscacha* tracks or signs, about 3:30 p.m. Personally I saw no fresh droppings, but some apparent trails (they last long in this climate). Saw burrowing owl, lizards. Foggy clouds 3 p.m.; stratus by 6 p.m.

5 September 1969. Tho M. and R. said heard bats in night, not across canyon took none. But M. got a *viscacha* in steel trap set under rock; the animal was dead with most of one hind leg eaten, as if attacked by a fox. We drove to Lima and picked up mail, shopped, visited Touring + Automobile Club to inquire about car license. Then in evening visited Mr. Manuel Plenge, 181 Armentariz, Miraflores. He was about 30, worked for S. Peru Copper, and has been intent in Peruvian birds. He is preparing a bibliography of these birds, and has a fair reference collection of books and reprints, including U.S. ornithological journals. He recommended several areas in Dept. Lima for collecting, including Bosque de Piedras on Canta road from Lima (to NE). Also he had fairly complete set of topographical maps. He was willing to ship specimens for us, as he had done for Payson (sp.?) and Ashmole, and would arrange for us to park the car in lot next to his office (av. Tarma 411, 8° floor, Casilla 2640, Lima. S. Peru Copper Corp.). He lived w. mother in elaborately furnished (much china displayed) house in fairly nice section, about 1 block from a small park and the ocean. We drove south on Carretera Panamericana to near km. 80, Pearson's *Tilandsia* study area, and camped there.

Journal

6 September 1969

to Nazca, Dpt. Ica, Peru.

We drove on S. through Cañete and Chincha to Pisco, and to Paracas and out road on peninsula to Lagunillas. Peninsula mostly red pebble erosion pavement, w. no vegetation. Road ended at beach where fair number of skeletons and bodies of pelicans, cormorants, shearwaters, sea lion (saved skull of one). Along shore an occasional dark Conchoder (spec.), tanning weeds aside among wet rocks at water's edge. Saw several Turkey Vultures and one Condor over beach, on windward side. Road to Pto. Pajero not open to public, except Sundays & Sat. afternoons; apparently guano loading area. We shipped Laguna Islands, and took shortcut to highway (km. 250), and headed S. To W. of Sea, hills of sand perhaps 500' high, perhaps w. rocky hill base. Much flat pebbly desert too. Continued on to Nazca where we met W. Franklin (Utah State, low grad student), who has been working on vicuñas at Pampa Galeras Vicuña Reserve. He & wife live at Bolognesi 263, near the Hotel de Turistas, and he spends 5 days a week at the preserve. Camped on desert nearby; cold wind eve, wet dew at night.

7 September 1969. Car & tent repair, and packed specimens, other jobs, in Nazca. Departed 3:30 p.m. & drove up Perquis road 52 miles, to alt. 10500'. Along road landscape nearly barren, tho occasional cactus or small brush, and many trails of goats, and a few large flocks of goats. Camp area had remainder of ^{browsed} grazed shrubs among boulders. We all set snap traps; I set 22 among boulders, rock wolly, save near bushes. Just before reaching site, R & H saw a dark "volcani-like" animal run across the road; a gibbon? There were small tracks w. deep pods at the site. Clear evening among low red-rock cliffs and boulders. No water near.

7 September 1969. Clear calm dry night. ML took 4 mice, R & H 2, and I took 2, all apparently P. darwini. We saw various finches and flycatchers. Departed and drove on 15 miles to highest point, about 12500 ft. (70 miles

Journal

7 September 1969

To Pampa Galeras, Dpto. Ayacucho, Peru.

from Nazca), where we saw groups of vicuñas, and a little further on saw llamas and the buildings of the vicuña preserve. We talked w. over there, who said latest census gave about 1100 vicuñas on preserve (6000 ^{hectares} ~~acres~~) and about 1700 outside. Also there were llamas, alpacas, cattle, and a number of Indian family dwellings (also pigs loose around headquarters). They said there were 3 hueros (Tinamotis) on hill to S. of hdqtrs., + many about 4 km. to SW where were fresher. They had a map showing location of vicuña colonies too. We tried to camp near buildings, but dogs and pigs became agitated so we drove 6 miles toward Piquis, to about border of preserve, + camped 1/2 mile S. near boulders, grass, shrubs, and a few quenna trees. We set traps: I set 31 snap traps and 3 steel traps. Most near low cliffs and quenna. I shot a Upucatheria in rodent (specimen). Saw no lizards. Flocks of llamas, and some cattle and sheep. Saw no tinamou or vicuñas.

8 September 1969 Calm night, 2/10 overcast, froze water in tent. My snap traps held 2 Phyllotis pictus, 2 Calomys, and 3 Akodon boliviensis (decayed ♂ 13g, ♀ 14g, juv.). Others caught 0. Steel traps, no results. I shot a flycatcher (spec.). M.L. put up 3 of my mice. Clear morning. We took up traps and drove to headquarters (of Galeras Reserve) and visited w. W.D. Franklin, who showed us some of what he was doing. He had an assistant who watched ^{several} groups, plotted movements and encounters, from small huts. Study area blocked off into 200 m² squares by painted piles of stones. He also showed us a road, leading SW from our camp of last night, where there were said to be Rathoprocta in thick bunchgrass on hillside, above stream. On way back to highway, on rocky - short grass ground about 100 yds from knee-high tola, we ^{saw} flushed two Tinamotis pentlandii walking side by side. I shot at them at long range, w/o effect, then ran after them until they flew upslope into dense tola. Later, about 7 p.m.,

Galeras -
74 Pq.
112 Nazca
186

Journal

8 September 1969.

Pampa Galeras, Dpto. Ayacucho, Peru.

the 3 of us tramped slopes in area and flushed one, which flopped and sailed 200 yds. down slope and landed in ditch at bottom. We were unable to flush it again. We continued on down thru woods to area of supposed Inca works, Incahuasi, where there were stone walls, and water in creek bottom. This about 1 mile from caradero. We set traps. I put 30 snap traps near rock walls, boulders, and bunch grass (rare bush) on S. slope. Ray searched tall grass for Neotoma but saw none. We saw 6 Thryothorus at one site. M. saw a teal in creek pond, & I shot it (spec.). Cold clear calm night. I saw one lizard today and M. collected one. [Incahuasi]

9 September 1969. Frosty morning. Much calling of Thryothorus at dawn, and some at night, but heard no tinamou. My traps held 6 Phyllotis pictus, 1 P. boliviensis. M. took 2 of latter, 8 pictus. I shot a hummingbird (spec.) on boulder among thick grass. Near stream in fine sand spots, I saw apparent tracks of small mouse (P. sublimis?). We saw a P. boliviensis run to rock wall about 8 a.m., but 40 live traps set for about 3 hrs. thereafter took none. We put up specimens, then drove 4 miles farther on road (Seite about 30 km.), to where area mostly low tala. Searched, but found no tinamou there. Then returned to tala zone where we had seen Tinamotis, but 3 of us searching about 2 hours found none. Then back to headquarters, talked w. personnel, and on 2 miles to summit, then down slightly 3 mi. to rough rock and brush canyon, where we set traps. I set 30 snap traps in rocks near brush. Overcast afternoon, warmer than yesterday, but wind came up about 7 p.m. and continued on into night.

10 September 1969. Frostier morning. Checked traps. I had 1 Neotoma, 1 Phyllotis boliviensis, 5 Phyllotis darwini. M. put up some of these. We reset traps; I set 30 snaps. We were mystified by 10 x 3 mm. droppings scattered on trails

Journal

10 September 1969

Pampa Galera, Dpto. Ayacucho, Peru

and sand near stream, or of large free-ranging rat. I put ^{some} traps on sand near stream, where some mouse footprints. I shot one vesicula which ran near me, but saw no others. Also I shot a flycatcher and a Certhia. About 5 p.m. we saw a pair of Aplomado Falcons land in area short grass and tota, as if feeding (or specimen). Overcast and sprinkled about 6 p.m. We stayed at headquarters hut.

11 September 1969. Moderate breeze night, but no frost. My traps held 3 P. darwini, 1 Akodon boliviensis. Clear morning; wind about 10 kts. Others took P. darwini, and M.L. a short-tailed mouse. We drove on down to Nazca, about 54 mi. from summit (measured more ascending) to repack, get tires, lubrication, and so on. Also visited w. Mrs. W.L. Franklin (nee Burns, El Segundo, Calif.). Boy promised by carpenter for yesterday was half finished, but by dark he finished, a rather rough job but usable (for storing extra eqpt. in Lima). Then we drove on north in dark to about km 295, in desert north of sea.

13 September 1969. Foggy morning. We drove on to Hotel Paracas, arriving 0730 a.m. (turn off Panamericana near km. 250 at fertilizer plant; unmarked). Talked w. manager, who knew Phil ^{Ashmole,} ~~Ashmole~~, Jay Schell, Jim Fowler, etc. A corder mounted in bar had been taken by Fowler. Mgr. showed us article in Life en Capañol, July 20, 1969. He said Logunillas a good place to see corders. We drove down Logunillas Grande road about a mile, then to a bay to south, w. long sand beach. On this I found many remains of sea lions, pelicans, cormorants, and other such, including a green (?) turtle. Fishermen said only occasional corder there, but many about 1 1/2 hrs. to S. on road. We then went to Logunillas beach, which we had visited about a week ago. Again found many carcasses of sea lion in various stages of decay, including pups. I found 3 fair porpoise skulls, and many poor ones. Found about 5 penguins, some dried, one fairly fresh. Also Puffinus spp. shearwaters, gulls, pelicans, cormorant remains. Most impressive were the remains of Leathery-backed turtle! I found 20 dried heads, and saw

Journal

13 September 1969Paracas Penn., Dept. Ica, Peru.Sea
turtles

about half as many carapaces in sand - all rather old, probably several months. In addition, many flippers, apparently cut off. All lying in sand along $\frac{1}{2}$ mile of beach. Evidently a turtleing ground or beach at some season. Apparently meat taken or oil rendered here. Many oyster catches, terns, other shore birds. A few cormorants. One huge flock 500+ cormorants in a ragged formation (all black). I found fairly fresh remains of a *Puffinus* w. sooty upper parts, chestnut ventrally including wing, living, + white bar on wing at base ^{primary} ~~second~~ ^{feather}. We picked up various shells on beach; most to be left in Lima until can appraise value + ship if desired. Got gear ready for leaving. Cleared about noon and thereafter pleasant, w. wind about 10 kts. from SW. We saw up to 8 turkeys, vulture at once, but no condors.

Drove N. and camped near km 80 south of Lima.

14 Sept. 1969. Repacked gear and drove to Lima. Visited Manuel

Blery. Left car at parking lot. Went to airport and departed in evening for San Francisco.

15 Sept. 1969. Arrived Los Angeles. Went thru customs w. no problems.

Continued to San Francisco and Berkeley +

End of Peru 1969 trip.

C. B. Koford

and E. J. Koford

1970

Catalogue

CBK:

#4341-4454

+ 1969 4455, 4490-95.

Peru

EJK Nos. 11-32. 1970

Specimen Catalog

Peru Trip - Summer 1970

1970

16 June 10 Km. NW Quito, Prov. Pichincha, Ecuador. 3700m. [Hd. TV tower road, slopes of Mt. Pichincha.]

✓ 4341 ♂ t. 3 *Oryzomys* 216-120-23-17, 24 gms.

✓ 4342 ♀ no emb. ^{sp. ①} *Oryzomys* 214-117-23-17, 23 gms.

✓ 4343 ♀ no emb. ^{Soricid} *Cryptotis* 112-30-13-6, 9 gms.

Above 3 on very steep s. slope near base vertical rock face; green shrubs, thick grain ichu.

17 June ²² ~~26~~ Km. NNE Quito, Prov. Pichincha, Ecuador. 2500m. [= 1 Km. ^{SW} of Equator monument] [base Casitagua Co.]

✓ 4344 ♂ t. 9x6 *Phyllotis haggardi* 183-84-23-22, 29 gms.

Snaptapped, floor fire road case under 5' boulder on dry mod. slope facing E, 50 yds. up from dry ravine. Prickly yucca + sparse goat-grazed vegetation.

²⁶ ~~22~~ Km. NNE Quito, Prov. Pichincha, Ecuador. 2800m. [= 4 Km. by road to NW of Equator monument]

✓ 4345 ♀ ut. flaccid, bloody. *Alodon boliviensis*? 167-64-18-13, 27 gm.

✓ 4346 ♂ t. 4x3 " " 165-65-21-15, 25 gms.

Reithrodontomys mexicanus soderstromi
✓ 4347 ♂ t. 4 *Oryzomys* 180-104-20-17, 12 gms.

✓ 4348 ♀ no emb. ^{sp. ②} " " 169-96-19-16, 10 gms.

✓ 4349 ♀ ut. h. flaccid, no emb. " " 189-107-20-17, 15 gms.

✓ 4350 ♀ no emb. ^{sp. ③} " " 174-102-19-17, 10 gms.

Above 6 near boulders in thick low mixed brush, w. some dolls, slopes 20-30%.

Cytot.

A 4351 ♂ t. 2 *Oryzomys* " 163-92-19-16, 10 gms.

Cytot.

B 4352 ♂ " 162-95-19-17, 9 gms.

Flea Tonga, 2 L ankle, 1 R, 147mm out on tail, 1 distal car. in ROL.

C cyt. 4353 ♀ *Oryzomys* " 159-86-20-16, 9 gms.

C cyt. D 4354 " 163-97-19-16, 10 g. coll. 1 Flea Tonga, R car.

✓ 4355 ♂ ♀ ut. h. bloody *Oryzomys* 171-99-19-16, 11 gms.

✓ 4356 ♀ 2 emb. C-R 22, *Alodon* 168-71-22-15, 28 gms.

18 June 22 Km. NNE Quito, Prov. Pichincha, Ecuador. 2500m.

✓ 4357 ♂ t. small (<2) ^{buff, chest} *Oryzomys* *Reithrodontomys* 163-98-20-17, 9 gms.

✓ 4358 ♀ 1 gen. hipps. ^{gray chest} " " 196-110-20-18, 16 gms.

Above two near boulders in short scattered shrubs, ferns, cactus on dry E. slope in rocky canyon, snaptapped.

Discarded animals -

17 June 1970, 20 km NNE Quito

♀ Nd slightly eaten. wt. 21 gms.

ut. scars, 2 RIL. Akodon (bolivianus?) - like 4345

Tunga fleas. 17-18 June 1970

♀ 4358 R ear, lumps in tail

4353 - Saved 1 R ankle, 2 on R. foot (foot attached),
1 from distal L ear.
(Photoed animal in Kodachrome)

4355 - Coll. 1, R ear.

These together in 70% R.H.

From both drier (4350) + wetter sites.

All Oryzomys. Photoed.

Catch - Alto Calacala -

June 23 - 2 Akodon bolivi.

June 24 - 7 Phyl. darw.

1 Hesperomys

3 Canis - alive, steel traps ♀ 130g, ♀ 225g,

2 Ak. bolivi. - live trap.

1 Ak. jelskii - live tr

Discarded

P. darw. ♂ 31g, t. 2

♂ 23g, t. 2

♂ 34g, t. 4

(♂ 40g, t. 2 - specimen) -

♀ 27g, ut. imm.

Ak. bolivi.

♂ 16g, t. 2

♂ 14g, t. 2

♂ 18g, t. 3

♀ 15g, ut. imm.

Specimen Catalog

1970

Juliaca

24 June Alta Calacala, 40 mi. NNE Putina, Dpto. Puno, Peru. 13400'4359 ♂ t. 2 Hesperomys ducilla 119-54-18-16, 10 gms.

Bare boulder in short brush near grass, mod. slope, 50 yds. above stream.

4360 ♀ ov. < 1 mm. ^{sk. oss. Furnarid}

20 gms, sl. fat.

Rectus yellow. Iris light brown
Ground among grass bunches and rocks; liked bare ground.4361 ♂ t. 2 Phyllotis darwini 236-127-26-22, 40 gms.

25 June

4362 ♀ no emb. ^{Calomys} Hesperomys ducilla 143-70-17-19, 12 gms.4362 ♀ no emb. AKodon jelskii 165-69-24-20, 22 gmsTall thick grass, damp ground; 50 yds. to nearest rocks; flat (Cavia area).
Tail cut short4363 ♂ t. 4 AKodon jelskii 142-35-26-21, 40 gms.Thick grass, tall, damp, in Cavia to trails. 10 yds. from rock wall.

Skull only

43 64 ♀ imm. Cavia

c. 529, died to overnights

182-4-35-22

130 gms. fresh

part. too short; par.

Skull only

43 65 ♀ t. internal, 2 ut. bulges, 9x12

PO 10x12

225 alive

212-5-40-22; 225 live.

(180 gms. dead in cage after 1 1/2 days.)

Skull only

43 66 ♀ t. internal, 2 ut. bulges, 9x12

PO 10x12

233-12-40-22

224 gms. alive (210 dead, June 25)

capt. June 24.

Skull only

43 67 ♂ t. 9x12

227-13-40-23

280g.

Skull only

43 68 ♂ t. 15

loc. access.

247-10-45-25

270g.

lact. tiss. 2 ut. bulges, 11x11 mm, L. horn

4369 ♀ Cavia

244-10-41-24

280g.

4370 ♀ ov. < 1 mm.

sk. partly clear

mod. fat, 20 gms.

Furnarid

4371 ♀ ov. < 1 mm.

urca

sl. fat, 22 gms.

4372 ♀ ov. < 1 mm. Troglodytes aedon ?

sl. fat.

4373 ♀ no emb.

26 June ♀ Cavia Phyllotis d.

194-90-24-20, 30 gms.

26 June

lact. tiss; 2 ut. bulges, 11x11 mm.

4374 ♀ Cavia

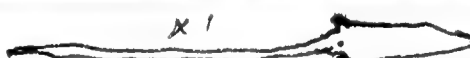
Caecum 15 g. (0600-0830)

238-8-39-24, 250 gms.

2 emb. lgst. 20x15, both R. horn; emb. C-R 15 - feet, eyes.

4375 ♀ ♂ Cavia

229-9-39-22, 243 gms.

Semen plug -
Cop. plug ()

L. 10x11 mm. No "milk" in epid.

Stomach empty; caecum 13 gms (taken 2:30-4 p.m.)

All Cavia cataloged (some skull only)

Cavia June 24

130 pm. ♀ - front leg injured.

vulva closed. Caged. Died overnight. ut. inactive, imm.

♂ 225 g.

♀ 224 g. - after overnight in trap.

June 25 - Cavia

in trap 0630

"

in traps 06 p.m.

↑ previous to June 25,
may have listed other
Phyllotis in darwini

Discarded:

June 25

P. darwini "osilae" { ♀ 30 g., noemb. 192-90-24-20

" { ♀ 27 g., ut. imm.

" { ♀ 24 g., imm.

A. boliviensis ♂ 16 g., t. 2

" ♂ 24 g., t. 3

= Phyl. osil. (buff w. K. chest) (ear 22
♂ 30 g., t. 3
♂ 34 g., t. 3
♂ 33 g., t. 3

♀ 34 g., old ut. s.

June 26 - 1 Cavia (betw. 0600-0830. AK. b. in steel tr. (9 sc

31 Snaps = 3 P. d., 2 A. j., 1 A. boliv. - 16 g., ut. inactive

Cavia - 2:30-4 pm., ♀ ^{♂ s.} plug.
cataloged
4315

→ AK. jelskii -

♀ 35 gms., ut. sc. 1R 2L 1C.
♂ 29 g., t. 2, black.

June 27

0600, 0700, 0745 - 0 in Cavia tr. (+ P. arulæ, 1 ak. boliv. 0600)

0830 - 1 ♂, 300 g. (catalog)

30 Snaps - 3 ak. jelskii { ♀ 35 g., ut. sc. 1R 2L 1C ♂ 34 g., t. 4.
♂ 29 g., t. 2, black ♂ 32 g., t. 3
♀ 36 g., ut. sc.

2 P. pictus ♀ 34 g., ut. inact. ; ♂ 20 g., t. 5.

♀ 40 g., noemb. - 2 P. arulæ ♂ 28 g., ut. imm. ; ♀ 29 g., ut. imm.

2 ak. boliv. - ♂ t. 3 (imm.) ; ♀ 10 g., imm.

1 ak. boliv. - 0800-0830 in Cavia line ; ♂ 26 gms., t. 2

Hesperomys - 1 Hesperomys - ♀ 12 gms. (catalog)

♂ ak. boliv. t. 10x6 (steel trap, 1100)

1 pm. - shifted 2 steel traps, Cavia line.

8 p.m. - no Cavia, 1 P. pictus (in thick grass).

Phyl. pict. - ♂, 33 g. (180-80), ut. inactive
(steel trap, tall thick grass, etc).

No Cavia 8 p.m.

Specimen Catalog

26 June Alta Calacala, 40 mi. NNE Juliaca, Dpto. Puno, Peru. 15400 ft.
no emb. big!

4376 ♀ long ut. hrs. *Phyllotis* *osilae* 248-126-26-22, 48 gms.

27 June 4377 ♂ ut. inact. *Hesperomys* *savella*? 134-63-19-17, 12 gms

4378 ♀ no emb. *Phyllotis* *pictus* 180-81-25-20, 34 gms.

27 June skull only semen plug stem. 20% full; fine green mush.
4379 ♂ t. 16x13 *Cavia* 235-10-41-24, 300 g.

Heda. Calacala, 7 mi. SW Putina, Dpto. Puno, Peru. 13000 ft.

4380 ♀ t. 4 *Mustela* *fronata*. 288-91-35-18, 110 gms.

Found freshly dead, bloody neck, in thick veg. in garden by Eric Koford.
28 June ut. h. 20x2. No emb. or scars.

4381 ♀ *Mustela* *fronata* 304-106-35-17, 100 gms.

shot about 0700 in rock wall near tree and rivulet (*Cavia* area) near caserio.
25 June skull only
4382 *Felis* *pajaro*s head & body ca. 510 mm.

Killed by dog about in grassland about 2 miles NW of caserio.

1 July Lga. Lake Loricota, 21 mi. W SW Mazocruz, Dpto. Puno, Peru. 14900 ft.
no emb. or scars capt. June 30; overrite in cage. Mod. fat.
2 sl. cyt. skull only 4383 ♀ *Ctenomys* *opimus* 240 gms., 282-92-40-8
2 sl. cyt. skull only 4384 ♀ ut. bulge, 1 R 15 mm. (resolving?) capt. June 30; overrite in cage. Mod. fat.
295 gms., 285-97-40-7

9 July Died 8 July 1970, in captivity. (died in capt.) 2 July 9
skull only 4385 ♂ t. 9x6 *Ctenomys* *opimus* 320-91-40-10, 360 gms

4386

4387

} given to
sra. Paredes,
Calacala.

3 July 5 mi. N. Mazocruz, Dpto. Puno, Peru. 13000 ft.

4388 ♀ *Akodon* *berlepschii* 158-66-21-14, 22 gms

Base cliff on mod slope near tufts bunchgrass and scattered tola, m. *P. derwini*.
1 July Lga. Loricota, 21 mi. WSW Mazocruz 14900 ft.

SK. + pen. 4389 ♂ t. 20x15 *Lagidium* *p.* 610-283-90-60, 2 1/4 lbs.

SK. + pen. 4390 ♂ t. 15x15 " *p.* 602-283-85-61, 2 1/2 lbs.

4 July Heda. Pichipichuni, 6 km. NW Huacallani, Dpto. Puno, Peru. 12800 ft.
(coll. E J Koford)

4391 ♂ t. f *Calomys* 115-42-17-17, 14 gms.

Capt. July 4 eve; killed July 8 eve.

9 July skull t. 20x10
4401 only 4392 ♂ t. f *Ctenomys* *peruanus* no meas., 360 gms.

Catch
June 27 Cavia ♂ 300g. (cat. - skull only)

June 28 Only traps, 8 for Cavia

0700 - 1 Phyl. pictus ♀ 150g, thick grass runway. big! disc.
209 - 95 - 25 - 20. ut. long, but no scars.

1 AK. bolivi., ♂ t. 2 209mg

disc.

1 July - shot 2 viscachas, Loricata, Capt. 3 Chenom., traps.

Cytotax.

2 July Chenom., Loricata, Hand centrifuge.

red. ♀ 240g. - me! 15

tape-pole ♀ 295g inc 6 min.

Spun - then 20 min to throw off 3 coats!

Discarded: -

Phyllotis darw. chil. - fluffy
♀ 234.114 - 26 - 25, 46g.
ut. long but inactive

AKodon bolivi. 18 gm. ♀, ut. inactive

P. darwini 24g. ♀, ut. inact. (prob. imm.)

AK. jelskii ♀ 24g. ut. inact. (imm?),

3 July - 5 mi. N. Mazocr.

- 1 AK. herlep. (catalog)

Discarded:

6 Phyl. darwini

♀ 44g. tiny old scars ut.

♂ 30g. t. 4

♀ 31g. ut. imm.

♂ 20g., t. 3

♀ 23g., imm.

♂ 28g., t. 3

Specimen Catalog.

1970

5 July

Heda. Pichipichuni, 6 km ^{NW} SSW Huacallani, Dpto. Puno, Peru. 12800'.

2 sl.
cyto.

4392

♂ t. 2. Calomys?

94-34-15-15, 9 gms.

Caught by hand among grass clumps on flat ground near river, in eve.
Capt. a.m.; killed 2 p.m.

2 sl.
cyto.

4393

♂ t. 10x12 Ctenomys peruanus

323-01-40-11

, 515 gms.

6 July

3 Km. E. Juli, Dpto. Puno, Peru. 12600 ft.

(dead 24 hrs)

4394

♂ t. 3 Phyllotis pictus

167-76-23-20, 26 gm.

5 July

Heda. Pichipichuni 20 mi. S ^{Juli} July, Dpto. Puno, Peru. 12700 ft.

4395

♂ ~~Ctenomys peruanus~~

(dead 2 days)

360 g.

4395

♂ t. 9x12 Galea musteloides

235-10²-40-22, 220 gms

4396

♀ ut. h. short,
no emb. or sc.

235-12-38-23, 370 gm.

skull only

4397

♂ t. 10x12

238-11-41-22, 310 gms.

9 July

4 mi. SSW Limbani, Dpto. Puno, Peru. 13000 ft.

4398

♀ no emb.
or ut. sc. Calomys

100-31-17-16, 10 gms.

~~Loricata~~

8 July

Ctenomys opimus

4399

♂ t. 5 Oryzomys - buff spot chest

217-102-26-21 42 gms.

(capt. a.m., 9 July; killed 8 p.m., 10 July.)

cyto.
2 sl.

10 July

♀ ut. horn thick, inactive.
Phyllotis osilae phaeus ?

254-144-27-27, 36 gms.

11 July

3 mi. NNE Limbani, 9200 ft.

(coll. EJK) [Aguakani]

4401

♂ t. 6x5 Oreolestes inca

228-120-24-15, 31 gms.

Swampy, 10' from water - boulders, moss, ferns; damp lush green veg.
brown belly

4402

♀ no emb.
or sc. Oryzomys

230-134-24-16, 23 g.

4403

♂ t. 3 " Flycatcher - yellow center.

107-109-23-15, 15 g.

(coll. EJK Ford)

4404

♀ or. < 1 mm.

10 gms, sl. fat.

Tanager

4405

♀ 1st. or. 1 mm.

no wt.; sl. fat.

12 July

4406

♂ t. 2. Oryzomys

200-115-25-16, 16 gms.

4407

♂ t. 5. Akodon b.

no meas.; 22 gms.

4408

sex? Tanager - dk. blue.

no fat, 10 gms.

4409

♀ no emb. Phyllotis bat

56-0-14-16, 13 gms.

Netted over rocky stream; net left overnight.

7 July -

Catch:

1 Eligmodontomys? (alive) (by hand) → (catalog)

Snaps: 5 AK. bolivi. 13-19 gms,
2 ♂♂, t. 3. 3 ♀♀, ut. inact. } disc.

4 Phyl. darw. ♀ 47 gms, ut. long but inact.

♀ 36 gms, ut. inact.

♂ 28 g, t. 3

♂ 27 g, t. 3

3 Phyl. solal.

♂ 31 g, t. 3.

♂ 33 g, t. 3.

♀ 24 g, ut. inact.

♀ 22 g, t. 3

1 Calomys

→ (catalog)

6 July - nr. Juli - 30 - 200 yds from lake.

1 P. pictus (catalog)

4. P. darwini - ut. sc. ♀ 281 g, 1 c. 221-114

, 43 gms (24 h old)

♀ 29 g, 1 imm.

♀ 31 g, buffy med. ch.

♂ 28 g, t. 3 - buff spot chest

1 AK. bolivi.

♀ 26 gms, ut. 5 cars.

Disc.

9 July - 4 mi. SSW Limbani.

1 big Phyllotis (catalog) (alive)

1 big Oryzomys (catalog)

4 AK. bolivi. - discarded:

♂ 27 gms. t. 4

♀ 15 gms, ut. inact.

♂ 14 gms, t. 2

♂ 13 g, t. 2

11 July - Agwalami

1 Orolestes

(CBK cat.)

2 Oryz. da brown belly (cat.) (CBK, ESK)

1 Oryz. gray " (cat.) (CBK)

4 AK. bolivi.? 1 (ESK catalog)

♀ 16 g, ut. inactive

♀ 15 g, ut. inact.

♂ 18 g, t. 4

} disc.

Specimen Catalog.

- 13 July 1 mi. SSW Limbani, ^{Dpto. Puno, Peru} ~~11350 ft.~~ 11500 ft.
^{Bg Akodon?}
 4410 ♀ no emb. or sc. 182-73-21-16, 26g.
 Damp area, under boulder near ferns, brushy grassy on slope.
- 4411 ♀ Neotomys 208-91-24-20, 42gms.
- 14 July 9 mi. SSW Limbani, ^{Dpto. Puno, Peru} 15200 ft. [N side Aricoma Pass
 500' below.]
 4412 ♂ t. 10x6 Phyllotis 280
 275-145-28-29, 70gms.
- 4413 ♀ Akodon jelskii 194-85-23-19, 35gms.
 capt. 13 died 14
 1 mi. SSW Limbani, ^{Dpto. Puno, Peru} 11500 ft.
^{Bg Akodon?}
- 4414 ♂ t. 7x4 220-94-23-15, 32gms.
- 13 July 8 mi. SSW Limbani, ^{Dpto. Puno, Peru} 13500 ft.
 4415 ♂ t. 3 Upucertbia 37gms, mod. fat.
- 15 July 15 mi. ENE Crucero, ^{Dpto. Puno, Peru} 15500 ft. (Abra Aricoma)
 None
- 13 mi. ENE Crucero, ^{Dpto. Puno, Peru} 15000 ft. [Lgo. Aricoma.]
 4416 ♀ no emb. or sc. Chinchilla sahamae 272-103-33-35, 143gm.
 Ft. of rock outcrop by road where a few tala bushes grow.
- 4417 ♀ no emb. or sc. Chinchilla 252-95-32-34, 115gm
- Small boulders, tala, Senecio, & Festuca clumps 50' from stream; much damp site.
 3 emb. R horn uti,
 4418 ♀ C-R 10 Ponomys 215-74-26-23, 82gms
- 5' from clear stream, rushing; alongside boulder by tala, Senecio, Festuca.
- 16 July 4419 ♀ no emb. Phyllotis darwini 274-145-29-29, 54g.
- 4419 ♂ t. 3 Phyllotis pictus 187-80-26-21, 37g.
- 17 July 10 mi. SE Nuñoa, ^{Dpto. Puno, Peru} 12900 ft.
 faint buff spot chest.
 4420 ♀ no emb. Phyllotis osilae 197-197-102-24-22, 25g.
- discarded ♂ 20g, t. 2; ♂ 21g, t. 2. Foot of rugged rock outcrop at edge grassy pampa.
- 17 July 13 mi. ENE Crucero
 cytatan 4 sl. 4422 ♀ no emb. Chinchilla sahamae 257-109-34-36, 125gms.
 Captured steel trap, July 16. Tame pet.

12 July - Agualani

catch: 3 gray v. Oryz.

30 snaps (caught 1)

5 AK. boliv.

35 live (caught 2)

1 Oryz., sm., alive (escaped)

1 bat-net.

AK.b. ♂ 17 g., t. 4. disc. + 1 cat.
♀ 16 g., imm., ♀ 17 g., imm. disc.
Oryz. - 2 ♂ 17, 16 g. - disc. + 1 cat.

13 July - 1 mi. S. S. Limbani - catch

2 big (AKodon?)

Shot miscarha -
14000'

1 Neotomys? (catalog.)

♀ - emb. R horn,
C-R 50.

2 P. osilae

♀ 23 g., imm. - disc.
♂ 48 g. - EJK catalog.

1 AK. boliv.

♂ 16 g., t. 2 - disc.

Set. - 2 live, 35 snaps - boulders, samcra, grass

14 July - 15200', nr. Aric. Summit - 19°F. min.

3 P. darwini (1 alive in live trap, ♂ imm., released
♂ t. 3, 29 gms. - disc.
♂ 70 g. (cat.).
1 AK. jelskii - ♀ 35 gms. (cat.)
1 P. pictus (escaped)

15 July

26 live tr. Summit + nr.

11 snaps

P. darwini ♂ 20 g., t. 3.

♀ 30 g., no emb. or sc.

AKodon boliv. (EJK catalog)

2 mi. by road S. of summit (= 13 ENE from Crucero)

1 Abrocoma chinchillula

1 Phyll. pictus

1 Neotomys

1 AK. jelskii

1 Peromys

(EJK cat.)

3 mi. by road. camp by lake Aricana
(cat.)

1 Abroc.

5 Phyll. darw. or osil. (1 EJK cat.) (others disc.)

1 AK. jelskii (disc.)

♀ 29 g., no emb.

13 snaps

Specimen Catalog

1970

18 July 3 mi. SE Nuñoa, Dpto. Puno, Peru. 13400 ft.

4423 ♀ no emb. Calomys

157-70-17-17, 18g.

4424 ♀ ab. long, ^{head} Phyllotis osilae

247-131-25-22, 42g.

Disc. ♀ 26g, inactive; ♀ 27g, inactive; ♀ 24g, inactive. Carnivorous in nature, no break.

4425 ♂ t. 2 Asthenes

sl. fat., 22g.

4426 sex ? ^{Flycatcher -} Ocathoecca ?

sl. fat., 13g.

4427 ♂ t. 2 Asthenes

sl. fat., 22g.

4428 ♀ ov. < 1 mm. Zonotrichia

no fat, 22 gms.

21 July Hcda. Calacala, 37 mi. NW ^{Tulaca} ~~Putina~~, Dpto. Puno, Peru. 13200 ft.4429 ♂ t. 3 Phyllotis osilae

216-107-27-22, 38gm.

4430 ♀ ov. < 1 mm. ^{Fringillid}

sl. fat.

23 July

1 emb., C-R 50, Left Horn int.

4431 ♀ ~~emb.~~ Cavia tschudii

253-12-38-24, 290gms.

(prob. immature)
Discarded ♀ 180 gms, no emb. or scars, taken July 21 41 mi; tail l. 220 mm.

26 July 15 mi. E. Arequipa, Dpto. Arequipa, Peru. 10500 ft.

4432 ♂ t. 3 Mus

177-85-18-14, 18g

4433 ♂ t. 10x5 Phyllotistail broken short
182-76-35-25, 43g.Lagunillas, 5 mi SW. Paracas, Dpto. Ica, Peru. [Beach.]4451 skull only Macronectes

freshly dead on beach

4452 sk. ll only Fulmar ?

skeleton on beach

4453 sk. ll only Fulmar ?

" " "

2 August 7 Km N. 15 Km. E. of Talara, Dpto. Piura, Peru.

4434 ♂ t. 2

Finch

mod. fat, 38gms.

4435 ♂ t. 1

wren

sl. fat, 20gms.

4436 ♂ t. 1

tyrannid

sl. fat, 10 gm.

4437 ♂ t. 1

flycatcher

sl. fat, 20gms.

15
 July 16: eve; Chinchillula (EJK), 3 Phyllotis darwini
 13 ENE Cr. → ♂ 26g, t. 3
 ♂ 28g, t. 3
 ♀ 54g, (cat.)
 ♀ 26g, imm.
 July 16 a.m. - 3 Chinchillula, 1 Phyll - EJK snags.
 13 ENE Cr.

4 Phyl. pictus - CRK (2 live tr., 2 snags)
 ♂ 29g, t. 3
 ♂ 24g, t. 3
 ♂ 34g, t. 3
 ♂ 37g, t. 3 (catalog)
 green stream area

July 15 - discards, ~~add~~ (see back of p. 5)
 13 ENE - P. darw. ♂ 30gms, t. 4
 ♂ 36gms, t. f.
 ♂ 30gms, t. 4

13 ENE - summit area
 ♀ 36g., 5 or + ut. sc.
 ♀ 38g, no emb.

July 20 - Calacala,

Cavia ♀ 180gm. 207mm total l. disc.
 no emb. - ut. long.

AK. boliv. ♂ t. 2, 24g. Hd & b = 90mm. disc.

July 21, AK. boliv. ♀ imm., 14gms. disc.
Phyl. osilae 38gms.

July 23 - Calacala -

disc. AK. boliv. ♀ 14gms imm.
 ♂ 15gms. imm.
 ♂ 28gms, t. 8mm.

Cavia ♂ 175gms., to Sra. P.

July 24 - Chinchillula ♀ 26gms, juv. - to Sra. P.
Cavia ♀ 75gms., to Sra. P. (juv.)
 6 Phyl. osilae, 1 P. pictus, 1 AK. jelskii
 see next page.

Specimen Catalog

1970

2 August

Parinas, 7 km N 15 km E Tulara, Dpto. Piura, Peru. 100 ft.

4438

?

sl. fat, 4 gms.

sk. 2/3 clear Furnariid

4439

♂ t. 2

no fat, 9 gms.

4440

sk 1/10 clear

Dendrocolaptid

3 August

♂ t. 1

no fat, 23 gms.

3 August

4441

Coccybrid

4440

♂ t. 2 (cul.)

sl. fat, 8 gms.

Tyrannid

4442

♀ ov. n.e.

no fat, 10 gms.

sk. ossif. tyrannid

4443

♂ t. 3 x 2

no fat, 20 gms.

Fondo, 14 km N. 13 km E. Tulara, Dpto. Piura, Peru. 100 ft.

4444

♂ t. small

Tomoceas

81-43-5-12, 2 gms.

Nestled under large mesquite on level dusty ground near dry bed quebrada.

4 August

Hummingbird

4445

♀ ov. < 1 mm.

no fat, 3 gms.

4446

♀ ov. < 1 mm. Piczorhinus?

no fat, 36 gms.

4447

♀ ov. sltly enl. Parrot
lost. 1 mm.

no fat, 160 gms.

5 August

10 km ENE Tulara, Dpto. Piura, Peru. 400 ft.

4448

♀ no emb. (nature ut.)
Phyllotis gerbillus

151-77-19-16, 12 g.

4449

♀ 2 ut. bulges RH, 3 mm diam.
" " "

150-77-19-17, 11 g.

4450

♂ t. 3 Mus musculus

147-78-18-13, 9 g.

above 3 near capen (+ mesquite) bushes or sand hummocks of flat desert.

6 August

5 km N. 20 km E. Olmos, Dpto. Lambayeque, Peru. 1800 ft.

4451

♂ t. 2 Piranga rubra.

sl. fat, 30 gms.

4452

Prepared by R. Jones (his catalog). sl. fat, 30 gms.

4451-53 - on p. 6 of catalog.

4454

on p. 3, bottom

1969 13 September Lagunillas, Paracas Peninsula, Peru

4455

Dermochelys - skull only

4490-95 Porpoise & dermochelys skulls

(Collected 1969 & later transported to Berkeley)

End

July 24 - discarded:

Phyl. osilae

♂ 32g, t. 3

♂, 33g, t. 3

♂ 29g, t. 3

♂ 27g, t. 3

♀ 23g, inact. uterus

♂ 24g, t. 3

R. pictus - ♂ 36g, t. 3

A.K. jelskii ♀ 26g, ut. sc., 2 L 3R

Nothoprocta ornata ♂ t. 5, wt. 400 gms.

33

~~25~~ traps

gave 9 mice.

10 live + 4 steel = 0

July 25 - 30 mi. → Arq. from Jol.

July 26 - E. of Arq., 10,700'

37 live traps = 1 mus, 1 Phyl.

♂ 18g.

♂ 43g.

1970 Specimen Catalog
- Peru -

24 June Alto Calacala, 40 mi. NNE Putina, Dpto. Puno, Peru. 13700 ft.

11 ♂ t. 2 Phyllotis darwini 205-105-25-20, 32 gms.

Base of rock wall near lunchgrass, 50 yds. above stream.

12 ♀ ^{ot. scars,} lgc. nipples. P. darwini 235-110-25-21, 44 gms. ^{same} habitat.

25 June

13 ♀ lgc. nipples. P. darwini 240-120-26-23, 50 gms.

14 ♂ t. 1. P. darwini 232-125-25-21

15 ♀ no emb. Akodon jelskii 170-71-25-16

Rock walls near brush, cliff face.

16 ♂ t. 2 A. boliviensis 183-73-21-13, 30 gms.

26 June

burned

17 ♀ ov. < 1 mm.

On rock wall and in grass on ground.

11 July 3 mi. NNE Limbani, 9200 ft. [Aqualani]

18 ♀ no emb. Akodon boliviensis 164-76-23-15, 21 gms.

Brush, 20-50 ft ruin, wet, moss, ferns, rocks, brush.

Same habitat.

19 ♂ t. 4 Crytomys 235-139-26-17, 23 gms.

flycatcher, yellow breast.

20 sex? 12 gms.

Trees above river (ferns, moss, wet).

Tanager

12 July

21 ♀ ov. < 1 mm.

38 gms.

Trees on mesa, not dense brush, moist not wet.

Tanager

Same habitat.

22 ♂ t. 6 38 gms.

13 July 1 mi. SSW Limbani, Dpto. Puno, Peru. 11500 ft.

23 ♂ t. 0 x 5. Phyllotis osilae 261-140-26-22, 40 gms.

Under rock boulders, very steep slope, ferns and moss but not wet.

15 July 13 mi. ENE Crucero, Dpto. Puno, Peru. 15000 ft. [Lake Aricaña.]

24 ♀ no emb., sm. nipples. Phyllotis darwini 260-137-30-31, 51 gms.

(25 ft.)

Under rocks close to lake, dry.

Specimen Catalog.

15 July 15 mi. ENE Crucero, Dpto. Puno, Peru. 15500 ft. [Arima pass]

25 ♂ t. 2x4 Akodon 160-49-25-21, 39 gms.

13 mi. ENE Crucero, etc.

26 ♀ no emb. Akodon jelskii 170-75-25-17, 32 gms.

27 ♂ t. 5x3 Phyllotis pictus 196-79-25-22, 49 gms.

28 ♂ t. 4 Neotomys ebriosus 190-76-24-16, 42 gms.
skull only mod. fat

29 ♀ no emb. Chinchillo 250-109-34-36, 120 gms.
skull only

30 ♂ t. 3 " 270-110-34-36, 152 gms.
skull only

31 ♂ t. 3 " 265-106-31-38, 120 gms.

25 July Huaylara, 55 mi. ENE Arequipa, Dpto. Puno, Peru. 15500 ft.

Diolacmus multiformis s-r 96 mm.

Running on rocks in barren area

End EJK

Herp

32

[W. N. Johnson
coll.]

C.B. Koford

1970

Journal

Ecuador

Paru

Journal

(Berkeley to Peru)

13 June 1970

Berkeley to Panamá

(with Son Erik, 14 yr. old, as assistant)

Drove to San Francisco airport and took Panamerican flight 515 to Panama. Stayed in Hotel Internacionales near Canal Zone (\$12 for 2). En route we flew over upper Baja California and had fine views of W. coast and deserts, then over the Gulf and Durango, passing close to Mexico City. On to Guatemala, where we made rough descent through clouds. about 1 hr. at airport, then on to Toluca. \$2 aa. by limousine to city.

14 June 1970 Sunday

Canal Zone, Panama

We took 7 a.m. train at Panama station (first class, 70¢) for Frijoles. Canal Zone little changed from 1957 appearance. At Frijoles we took the waiting launch (Snook) for Barru Colorado Is. On island we hiked to Van Tye Big Tree, then to Big Trees near AWA 9. Saw 3 rd tree squirrels near start of Barlow Trail. Saw 8 hawks w. small infant (1-2 yrs. old?). Saw about 4 sps. of hawks and heard others; they seemed more numerous than in 1957. Some ate green figs & dropped many to ground below. We flushed a King Vulture from a hawk carcass on trail near WMW 11. Many ^{orange} yellow black-palm fruits under palms, & much evidence of eating there (by agoutis? coatis?). We saw no coatis or tayras, but did see an agouti. We first heard sliding sounds - I thought it might be a manikin displaying - then saw it on ground. We also found its tracks agouti on muddy trails. Other tracks were small clawed hoof - marmoset? We saw groups of small toucans w. red rumps; many whistling calls from these. Also large toucan w. yellow breast. On trunk of Van Tye tree, saw 4 Accipiter hairs, one with an infant - when alarmed, adult moved a few inches & left infant clinging to trunk. We also saw one group of capuchin monkeys, & heard their calls. It did not rain during our stay on BCI. Few people about & little sign of current scientific

Journal

14 June 1970

Canal Zone, Panama

work. We talked w. one boy who was going to study Callinix in Colombia. About 3 p.m. took launch back to Frijoles, then train (2nd. class, 40¢) to Panama. Stayed at hotel.

To Quito, Ecuador

15 June 1970 To airport via taxi (\$5) to take E. Cuatrecasas A. flight 45₁ ^{at 0530} to Quito (turbo-prop). Stopped at Cali about 1/2 hr. This site

green & tropical flat land, but mountains on skyline. Very clean compared to Panama. Then on to over beautiful Sierra. Plane

passed over Lago Cuicocha (near Cotacachi), which has 2 islands in lake (Fernando Ortiz - C. barbeuthus). Snow capped peaks

visible from Quito (2930m.) - Pichincha just to north (4690m.),

Atacayo, Corazon, & Illimiza to S. & W. Customs customs

check - wonderful clean air, clear day, clean city. Fernando Ortiz

Cespo (Univ. Catolica, Biologia) met us & installed us at Pension

Florida (Calle Santiago), a couple of blocks N. of Parque de Mayo.

Then we visited his lab, where he had centrifuges, refrigerator, microscopes, & usual equipment (he has done chromosome preparations working for O. Pearson at Berkeley). Also there was Francisco León, a

field assistant, whom I had met on the 1964 Galapagos trip - Fernando said he was energetic, could put up skins, set traps, etc. Bothwell

accompany us up the zigzag road to near the television tower, where we hope to trap tonight. Bought bait. / at a red-hot paper flower we

saw a hummingbird (Lesbia victorae ^{sp?}), which perched and thrust bill up into flowers. Fernando had a few hummers in a

greenhouse with plants, too, & some lizards from Cuicocha and a small brocket deer (it had shed its antlers about November). There

have been riots - student leader killed, press bombed - at the state university, no many police in that area. / About 2:40 p.m. we departed.

Journal

15 June 1970

Quito, Ecuador

Fernando and "Pancho" León for the hills - first N. on 10 de Agosto to radio station, then W. through a new urbanization and onto a dirt road, paved with rough stones on wheel tracks. This road went up through eucalyptus ~~groves~~ ^{groves}, ascending rapidly, to a ranch yard (Mi Cielo), then ~~another~~ with gales (where you were supposed to donate \$1.20 for road repairs), past 4 separate TV towers, to a large flat turnout on a ridge (good view mountains and city). This was about 12 km. from foot of rough road, 20-30 from university. Tower 3 and 4 about 3600 and 3700 ^{meters} ft. elev., end of road 3770 (by altimeter). Arrived about 1530, 50 min. from univ., ^{"Mi Cielo"} ~~gate~~ was 9 km. before road end. Upper parts road through ~~rich~~ grassland, thick & ungrazed. Bushes along road (Fernando knew many), and a few large native trees. We saw a *Sylvilagus*, *Buteo*, big *Turdus*, *Grallaria* along road. Fernando said *Caenolestes* had been taken too. Top of road on a ridge in ~~rich~~ but some small S-facing cliffs on ridge, and higher ones about 1 mile W. We set 41 live traps and 12 snap traps on the steep slope, mostly nearly all by rock but near bushes and thick grass. Almost no bare ground - short moss or herbage cover by rocks. ~~A~~ Found apparent *Sylvilagus* droppings in grass by some rocks. Bait was a mixture of ^{rolled} oats, barley, wheat, & seeds. We departed from top and returned to Quito, where we had coffee w/ Fernando & wife. Supper & lodging at La Florida.

16 June 1970. Borrowed the jeep and departed 0730 for trap area.

It had rained last night and continued, gradually lifting. The road up mountain was bad in upper parts - we had to back around at some times. Rain stopped about 9:15, when we were on top. Our 12 snap traps held 2 *Onychomys*?, taken among dense brush and grass near rocks. Two live traps took only one

Journal

16 June 1970

Near Quito, Ecuador.

animal, a ^{*Cryptotis*} ~~shrew~~ (43 43). We took up all traps and returned down the mountain (13 km.) & drove back to Lab at Univ. Católica. / About 1:45 we left in jeep with Pancho Leon on the Carretera to Malacit 22 km. to the Equator Monument, in a comparatively dry area. Then on 4 km. to area of boulders in brush near a corn field. On various slopes we set traps, 30 live, 11 snaps, all near roads in attempt to get *Phyllotis* *hoggardi*. ~~to think they require drier site, some bare ground~~. Then 2 km. S. of monument we turned W. to a dry arroyo where there were many potholed rocks and set 9 live and 1 snap traps there on bare ground near rocks. Vegetation sparse, but yucca stems and short plants, *Tillandsia* on some rocks. Moderately used by goats. The first site had many chollas mixed in shrubs. Tom Fritz, grad student of Univ. Kansas, accompanied us on the trip (studying *Sterocercus* & similar lizards). / Ascending to tower hill the morning we saw black, white, & yellow finches (set *Piculus*?) along road banks, and flushed two *Notoprocne*. / Returned to Quito.

Visited w. Mr & Mrs Fritz, & Sr. & Sr. Ortiz - C. in evening. Then skinned 3 mice.

17 June 1970. Erik & I took jeep & ^{drove} ~~drove~~ to trapline, arriving about 9 a.m. The traps near boulders and ^{thick low} brush, rather moist, held 14 mice - ³*Chodon*, 2 spp.

Oryzomys, *Reithrodontomys*. & 7 of these were in the 11 snap traps - more efficient! We saw sparrow hawk and a falcon (*F. femoralis*?) over bushy hills. The smaller drier trapline, #5W of equator monument, held 1 *Phyllotis* *hoggardi* in snap trap, and an *Oryzomys*. The former looked like short-tailed *P. andersoni*, and habitat similar to dry parts of same (somewhat *P. andersoni* like habitat). We took up all traps and reset them, ^{live} 10 in area of catch of *P. hoggardi*, 2 under boulders nearby, 24 in the next quebrada to N., where boulders of a harder rock and vegetation a little more prominent. We also set

Journal

17 June 1970

Nr. Quito, Prov. Pichincha, Ecuador.

11 snap traps in this drawer. | We returned to Quito, arriving about 1430. Put up mice. Visited Fernando at lab again. Partly overcast today; no nevados visible.

18 June 1970. Departed Florida 0600, arrived trap site 0700. The 24 live and 11 snap traps held only 2 Oryzomys (snap traps), but area still looked suitable for Phyllotis. Some Tillandsia on rocks, clumps grass, ferns, ~~and~~ cactus, shrubs, but all about 1 ft. max. height, goat browse. We returned to lab. Put up mice. Processed chromosomes on 4 Oryzomys, w. poor spreads. | We gave 20 live + 12 snap traps to Fernando Ortiz, and enlisted cooperation of him and his assistant, Pancho León, in getting Phyllotis alive. Ortiz said Oreomys taken recently on NW side of Mt. Pichincha, by a local collector (in ^{Reibrod. ?} Quenqua tree). Completed packing for departure. Our house, Florida, about 2 blocks E of Versalle, 3 E of av. American, on Calle Santiago, about 3 blocks W. of Parque de Mayo. 120 sucres (\$8 \$6) per day, w. fairly good meals. No rain today, but overcast. August said to be driest month.

19 June 1970. To airport to take 0820 plane to Lima. About 3/4 cloudy. Plane (Braniff) late; departed about 0945. Cloudy, so saw only part of Catapapi and Chimborazo. More broken cover over Peru; we flew directly over Yungay + saw mud slide covering it (photos). Then on over Cordillera Negra and S. over coast side under to Lima. Overcast, ^{damp} ~~damp~~, there. Exchange 43. + soles/dollar. Curious customs inspection, arrived about 12:15. About 2:30 we went to Ransa storehouse. To reach it, go out Faucett toward Lima until hit Argenteiro; then must go about 10 blocks toward Collao to warehouse, on N. side. Our coffin box was almost alone in a wire-sided room. Contents damp, moldy, rusty. We got supply of live traps, snap traps, and a few other items. They gave us a box and string. Then we took a taxi to Lima and stayed at Postal del Sol, roughly 8 blocks S.

Journal

19 June 1970

Lima, Peru.

of Plaza San Martín on fr. sea betw. Cailloma + Ruffino Torico. With bath, 200 soles ea. for two - large but minimal room. We met Manuel Plazze and wife Isobel in evening. He told us that 3 bird men, ^{O'Neil,} ~~Other~~ Terburgh, + Werhe, were at Heda. Luisania (m. Ayacucho) or would be soon.

20 June 1970. To airport via taxi (80 soles) and took Faucett

flight to Arequipa, about 1 hour, passing close by Coropuna and other peaks w. snow. Little snow atop Misti. Arranged to take car at 0200 for Juliaca (Company Victoria, about 6 hour trip, 207 soles, good cars, co. located on San Juan de Dios, a couple of blocks from main plaza). Took room at Hotel Tumbas - ^{5/}240 w private bath, all clean + quiet.

21 June 1970. Car came for us at 0145. Picked up others. Then drove to Juliaca. Coffee at Solitario (2 soles). Icey windshield going over summit region, over 15000'. Nearing Juliaca, we passed 2 fair sized lakes, one w. many weed islands, apparently next site of giant coot. Juliaca about 0815. We looked for message at Hotel Barrientos, on main plaza - none. So left our baggage there and started for Calacala. First took a colectivo toward of Huancayo (15 soles) to Puturac Road. Hiked this road about 2 1/2 miles before a truck came - this took us about 8 mi. to Calacala road. Then walked up this road 11 miles to the Hacienda, where grad student Lynn Carpenter staying w. Sra. Emma Salinas Vda. de Paredes while studying Oreotrochilus hummingbirds. We received fine welcome, as I had ^{worked} ~~worked~~ at Calacala in 1951. Trid from walk and altitude (13200'). Bonito Bonotrichia and Scialis

Journal

21 June 1970

Heda. Calacala, ^{13200'} Dpto. Puno, Peru.

in flocks near house. We saw many flickers, as many as 7 at once, ~~on~~ ^{along} ~~the~~ road while walking. Gra. Paredes said many weasels around garden now; Lynn had seen one carrying a flicker. Gra. P. also said many Cavia now, where grass is thick. She ^{said} ~~said~~ some vespertilio on ranch. Lynn had seen one near house. Gra. P. said Tinamotis occurred in higher parts; about February, sometimes danced in groups, sometimes falling over as if drunk. Lynn thinks Gra. P. is good observer. Apparently the government will soon take nearly all of the ranch (for agrarian reform small farms) and the vecinas (about 1000). Threatened rain today.

22 June 1970.

A pair of large Buteo in eucalyptus near garden, perhaps nesting. White below, gray body, white tail, w. black band near tip and terminal narrow white band. One (♀?) with grayish breast. Many Cavia droppings on green short vegetation near walls near houses. | We all went to Juliaca, about 60 mi., to get our gear and do errands. We stocked up on ^{groceries} ~~groceries~~ and supplies. Gra. P. has regular room at Hotel B. - fair meals there at 3/30. | Then to Puno - looked at shotguns - \$100 for a light Italian single 16 ga. ! Tho said to be illegal, storekeeper sold me ammo - 105 cal. for box of 16 ga. no. 6 shot. | Car repairs in Juliaca. Then back to Calacala for ranch. Clear all day. Heda. Calacala

23 June 1970.

Few clouds - strong sun, mod. wind. One of the Buteos near house ^{carried} ~~carried~~ dangling a lizard (snake or lizard?) in bill while flying. | We drove to the Basque (queuña bushes near clear stream), about 7 km. N. of house. ^{Alto Calacala, 13400'} L. does most of her hummingbirding there. Their grass area included

Journal

means
"pelado pelado"
- bare place.

23 June 1970

Hadd, Calacala, Dpto. Puno, Peru.

many Cavia runways and droppings. we set out live traps there in a 60' spaced space grid, 5 wide by 8 long, baiting w. whole grain. Many rocky sites up canyon, as well as quina bushes, thick grass, rock walls. We set about 35 snap traps, and 4 small steel traps in various runways. Flocks of yellow and black Sperner. Swallows, ceruleans, fernsides, Phrygilus finches, ^{flycatchers} butio hawks, Lynn saw possible Oreomys in bushes - chickadee-like feeding, streaked breast, reddish on head, long bill. Fine clear stream about 6' wide. We set up tent among old rock walls near our Cavia grid. Wind died at night - clear and cold. No night sounds. We had set up 30' bird net near stream, near Peliter and quina shrubs.

24 June 1970 Two of 5 snap traps set ^{near} ~~near~~ tent had an Ahodon boliviensis by 7 p.m.

24 June 1970. 25°F. min. last night. High overcast today. Checked 3 steel traps in Cavia runs about 0700; by 0800 they held 2 Cavia. Took another by H about 11 a.m. ^{Then, w. 8 steel traps set,} No more through afternoon to 1730, when nearly dark. Other catch included 7 Phyllotis darwini, 1 Hesperomys, 2 Ahodon boliviensis in live traps on grid, 1 Ahodon jelskii in live trap on grid. The grid of 40 traps took only 1 A. jelskii, 2 A. boliviensis. Left traps set until 2 p.m. Then took them up. Evidently Cavia does not like to enter these traps. Snap trap line took the other mice. Our bird net took 0. Erik set about 25 snaps, I set 5 snaps, and 10 live traps in Hesperomys area, as well as 40 large live traps on bunchgrass slope, seeking an area for population census. Erik collected a

Journal

24 June 1970

Alta Calacala, Dpto. Puno, Peru.

fermaid (4360 CBK) and put up 2 *Phyllotis* (his catalog). Lynn C. told us that yesterday afternoon the ranch dogs killed a "gato montez" between here and the "caserio." Overcast all day.

25 June 1970. Min -30°F. Overcast. The 8 steel traps held 2 *Cavia*.

Taken after 1730 yesterday. The 35 live traps set among grass clumps and short bushes on hillside held 0. Erik took 1 *Heperomys*, a few *Akodon boliviensis* and *P. darwini* in his 20+ snaptraps. My 10 small live traps took 0. I hiked up canyon about an hour. Slopes covered with spaced *quechua* ^{scrub} ~~scrub~~, to about 15 ft. high. Near streams, moss, ferns, thick grass, and likely *Oryzomys habitat*. Later in day I set 31 snaptraps in that damper area. Shot a weasel and 2 fermaids during the day. Took one *Cavia* about 11 a.m.

29°F. min. temp.

8

0600

26 June 1970. None in $\frac{1}{4}$ *Cavia* traps 5:30 p.m. yesterday, but one in trap ⁰⁸³⁰ 0600, as if long there. Also an *Akodon boliviensis* and a *P. darwini* in steel trap, in

thick grass, 10' from boulders. My 31 snaptraps took 3 *Phyllotis*, 2 *Akodon jelskii*, 1 *A. boliviensis*. Some of discarded mice have probably been *P. orizae*, as well as *darwini*. No catch in bird

net; ^{moved} ~~moved~~ it to near rock wall, bushes, near camp where

flocks of black and yellow siskins perch and feed. During day, a flock of 10[±] glory ibises landed in bare earth corral.

Took a ♀ *Cavia* with copulation plug, between 2:30 and 4 p.m.

Breeding in mid-winter! Two have had small embryos, in both in L. or in R. horn. / He saw 2 ^{*Akodon*} ~~*P. darwini*~~ *boliviensis* active in

mid-afternoon a few feet from base of rock wall. / One

Akodon jelskii was at base of *quechua* tree, near stream; another in hole in red-rock formation. / Little overcast today;

Journal

26 June 1970Aita Calacala, Dpto. Puno, Peru.

afternoon hot in sunshine. In late afternoon, I set 30 snap traps near rocks and shrubs on a NE-facing slope near camp. The section of flat ground partly artificial. An irrigation canal runs out of stream and along hillside, & water flows down slope to flat, making soggy and bareilly green - good Cavia area. Clear calm evening. Dark about 6 p.m. Nothing in 8 steel traps in Cavia runways by 1930.

27 June 1970. Min. temp. 28°F. 3/10 cloudy today. Cavia traps held

1 Phyllotis orilae, 1 Akodon boliviensis, at 0600; no Cavia by 0745, but one (♂ 300 g.) at 0830. The 30 snap traps held 3 Ak. jelskii, 2 Phyllotis pictus, 2 P. orilae, 2 Akodon boliviensis, 1 Calomys?, also took 2 Ak. bolivi., ^{1 Ak. jelskii} later in steel traps. No evidence recent breeding except Lavia. About 1 p.m., shifted 8 steel traps to new sites in runways in thick grass, but no catch by 8 p.m. (etc. 1 P. pictus).

Accompanied Lynn Carpenter on hummingbird rounds - roost on cliffs in tower. Dra. Paredes brought meat in mid afternoon and barbecued it for us. Only ^{the 8} Cavia traps set.

^{Sunday}
28 June 1970.

The traps took a P. pictus and Akodon boliviensis. We packed up and returned to caserio. There we found that tomorrow was a holiday, so postponed trip to Puno. Set about 8 steel traps in garden, and ^{a few snap traps} near rock walls for weasel bait. Erik found a freshly dead male Mustela frenata in garden (CBK specimen). 29 June 1970. We hiked up road to 5 or 5.4 in afternoon and saw 3 Rathaprao, at lowest level an apparent Rathura. A few vicuñas in upper rocks.

29 June 1970. No weasel catch, but about 7 a.m. I saw one on rock wall near house and shot it w. 22 sk. sex; ♀ specimen.

$$\begin{array}{r} 4540 \\ 3.27 \\ \hline 31700 \\ 9080 \\ \hline 13620 \\ \hline 1484580 \end{array}$$

Journal

29 June 1970.

Hda. Calacala, Depto. ^{Pero.} Puno,

Spent most of day preparing specimens and getting ready to leave. Many Cavia trails and droppings in meadows and near rock walls around caserios. Buteo tame in garden trees, & probably nest there.

To no Have, Depto. Puno

30 June 1970. Departed 0630 and drove to Julica. Then Puno, where visited Univ. Nacional Técnica del Altiplano. Several biologists there. Julio Bustinga was working on "cariotyping" of lamoids and was especially helpful. Excellent supply of lab equipment and chemicals. Borrowed a hand centrifuge. About 1430, departed Puno for Ilave. First shopping. Then took road toward Mazacruy. Camped about 27 miles out, by an old bridge (thick Isalia droppings alongside the rock walls). Cold night. This in ichu grassland near Rio Huengue.

1 July 1970. 20° F. last night. Drove on S. Beautiful rock formation. Few fences, people, houses. Clear water in river. Some fords necessary. Many llamas and alpacas. At Mazacruy (2 km beyond), took road to Santa Rosa. A good road in construction by military. Up valley with small ice-crusts clear stream to edge of huge pampa, about 11 miles beyond Santa Rosa. Saw a group of 11 wild vicuña here. Many alpacas on the pampa. We drove on about 2 miles to ~~rocky~~ rocky hills (a small cemetery too), where Otenomys opimus abundant in loose sandy ground and vesicaria in rocks. Camp site here, about 2 miles short of closest approach to Lake Loricata. On near shore of lake, several groups of 10-20 flamingos, as well as Purpureal and Crested Ducks, and geese. Near camp set 8 steel traps (no 0) in fresh llama and guano.

Journal

1 July 1970

Lake Horisat'a, Depto. Puno, Peru.

for tuco-tucos! (caught one by 5 p.m., 2 more by dark). On hillside we set about 40 live traps and 35 snap traps among red boulders, tola, cactus, *festuca chumpe* - some yareta, *pyrenophyllum*, some sandy ground. Old mouse tracks common. Rat cotton as well as bait in live traps. We shot 2 *vesicaria* in rocks & saw many others, and many tracks. Sunset about 1730. Cold evening.

2 July 1970. Min Temp. 9°F. Sunrise 0615. Saw a *Ctenomys*

half out of burrow, digging, at 0745. Also ^{an} *Abrodon* *Phyllotis* *bolivianus* ^{sitting} ~~stand~~ up by his burrow near tuco burrow on flat sandy ground. Took 2 more *Ctenomys* by 0930, with most traps taken in. Our live traps held 0 - snaps took 2 *P. darwini*, 1 *A. jelskii*, 1 *Ab. bolivianus* ^(andersoni?). Again, live traps seem unattractive in cold. / Cold - milk frozen in tent, & coffee, water, eggs. Tucos survived, wrapped in burrow sack (but noisy struggler in wire cages all night). Overcast day. We left traps out until midday, but no more mice. Departed and drove back to Santa Rosa, Moquegua, and 5 mi. N. where we camped near rough red boulders and cliffs. Set about 26 snap traps near rocks, on mod. slope w. scattered tola, bunchgrass.

3 July 1970. Cold night; min. 12°F. Traps took 1 *Abrodon berlepschii* (spec.)

and 6 *P. darwini* (discarded). / Drove on N., intending to cut over to Juli, thence S. to Mr. Huacallani, but missed cutoff. So went via Ilave, then Juli. Thence, instead of direct to H., skirted shoreline to Pomata. Some shore small boulders, others muddy. Huge snowy mts. to E. (Illimani?).

Cattle and sheep wading in a mud-filled lake, feeding on water plants. We saw a gallinule w. bright red frontal shield. Numbers

Insert
see p. 14

Journal

3 July 1970

Heda: Pichipichuni, Depto. Puno, Peru.

of flamingos shortly before Panata. Many rock walls + rough huts, to lake shore and up rocky hills, including between vertical rock strata. Big army buildings in Panata, and 2 chains across road at control stations (but only asked where from and to). Then on rough dirt road over hills (15 miles out) to level dry grass pampas and to Husacchari. From there, cut back on Juli road 6 km. to Heda: Pichipichuni, where mayor Don Pedro Castillo remembered Pearson's "gendala" and showed us spot, a mile distant, where Pearson camped and found two-tuos ("to^ooro" here). We went to site and found the two-tuos burrows immediately, in short moss-like sedge bordering area of clumps thick grass, about 100' from river, 100' from a stone coral. A main group of about 45 burrows, w. gray pebbly soil forming mounds on some. 25 yds. W. of there, a group of about 6 burrows. At bunchgrass edge, a few Otenomys burrows which graded into Isolea burrows on slightly higher harder ground, nearer the river. Abundant Isolea droppings, and some burrows had been dug out by man. We set about 35 snap traps near rock walls + outcrops, and on slope in bunchgrass. Camped nearby.

+ July 1970. Cold night; 18° F. Traps held 1 Calomys, 5 shodon calvicornis, 4 Phyllotis darwini, 4 Phyllotis sublineatus. Last eve I took a live Calomys? by hand in bunchgrass. Decided all but 2 (list on back of catalog sheet). Warm day, mod. wind, to 1/2 cloudy. We set 6 steel traps in two burrows by 9 a.m. At least 2 holes showed fresh soil at 5 p.m. yesterday, but no fresh work by 9 a.m. or 12 m., + no catch. We worked on previous specimens. About 3 p.m., two traps buried in Otenomys diggings; reset, + about 4 p.m. had one Otenomys. A passing man told me that more workings to N., so I walked 1 km.

Journal

3 July 1970

12 ± mi. N. of Mazocruz, Dpto. Puno, Peru.

Insert, on p. 12. We drove down to Pampa Quellacota to look for Ctenomys peruanus, which Pearson had ~~seen~~ reported there. Picked up boy who knew the animal as "tocotoco", described its color, tail, and call. He offered to show us where. We ended up with his mother too, in legs typical derby + Indian dress. The colony they showed us was a Galea city, with guinea pigs bounding this way and that, in and out of holes - abundant, on slight rise in heavily overgrazed ground near houses. But we found no Ctenomys burrows. Brother of boy said the 2 animals in same colony, the tumor lower, but we did not return to check. ~~Tumor~~ Returning from Quellacota Hda. to main road, we forded a mud wall about 3 feet high. At this site dozens of Galea bounded about as before, another guinea pig "city."

cont. 4 July 1970.

Hda. Pichipichuni, Dpto. Puno, Peru.

along road to Juli and saw 100+ burrows in area crossing road. Also saw Ctenomys heads out of burrows and heard ^{bubbling} calls. We took ^{our} 8 steel traps and reset in new area. I saw one Galea go in hole within 6' of Ctenomys diggings at old site. At new site, a Galea "town" at one edge of Ctenomys area. I set 20 live traps, mostly in among grass clumps or in bank trails near stream. Calm cool clear evening. 3 Ctenomys from Loricata ^{survive} still in underages.

5 July 1970.

Hda. Pichipichuni, Dpto. Puno, Peru.

No catch in traps. We took another Ctenomys in early morning. We departed and drove toward Ilave. About 10 miles down the road we ^[roadhouse?] saw many Galea in area short green sticking plant (not grass) and shot 3. 2 of had large testes. We also saw occasional Ctenomys colonies. Eventually road climbed out of valley - very bad slow road - to about 13800', then descended and improved.

Journal

5 July 1970.

Nr. Juli, Dpto. Puno, Peru.

about 9 1/2 mi. before reaching Hlave - Juli road (2 km. N. of Juli), we saw hundreds of Otenomys ^(about 13700') mounds, some on 5% slopes as well as on flats. 1/2 mile further on, a small lake to E of road. Then on same road to Juli. Drove about 2 miles beyond, then turned off on side road down to lake edge to trap among boulders, brush, and rock walls. We set 25 live traps + 25 snap traps, hoping to Otenomys alive. Some Indians came + asked usual questions, but none after 2 p.m. + no dogs.

6 July 1970. Our catch included: P. pictus, + Phyllotis darwini, 1 Abodon boliviensis; saved first only. None breeding.

We departed and drove to Puno. A few miles from Juli we passed area of red rock formations w. strata nearly vertical; perhaps good for hummingbird caves. Then to Juliaca. Shopped, + drove to Heda. Cdsacala.

Heda Calacala to Heda. Checayani

7 July 1970. Prepared for Lirimani trip. Departed about 1 p.m. (w. Erik K. + Lynn C.) and drove to Putina, Mangani, and Heda, Checayani. There met the mayordomo, Ramirez, who knew L.C. from before + was very hospitable. I set 25 live traps near rock walls + outcrops, brush, + grass. Lynn + Erik searched caves in dark for hummingbirds and took one ♀. Calm clear night, warmer than usual. Ramirez said two kinds of conejos here, one in open ground, the other in thick grass near water. Also gets monkey, fox, skunk, viscacha, rare puma, and usual altyplano mammals.

8 July 1970. About 20°F, light frost in morning. My live traps held 0. Lynn C. got one Oreotrochilus in rock cave last night.

We had breakfast w. Ramirez (mayordomo) and departed 0800 for Ayangara.

Journal

8 July 1970

To Limbani valley, Dept. Puno, Peru.

Thence to Quilo and on to Cusco, arriving during lunch hour. Then on about 20 miles to Aucama summit (15700'). Spectacular ice & rock formations and various small lakes there. Road in good repair; no traffic. Saw no vicuñas in Cusco region. About 2 miles down from summit was point where I turned in overland to my 1951 camp. Foggy in this area and on down to where we camped in canyon, at 13100 ft. I set 20 live traps & 15 snap traps under boulders & rocks near grass, shrubs, often on moss among ferns - may get Oryzomys or Phyllotis ^{orilae} ~~phaeus~~. This region little changed since 1951; a few new inhabitants at higher levels. Aucama area brown, tho green near water & Distichlis patches. Near camp, Erik set about 15 snap traps. L.C. found flowers that Oreochilus feeds on. Saw many vicuñas along rockhills below road in descending. Have one Ctenomys peruanus alive still; 2 ^{living} openiers left at Colacala. Hail as we started up to Aucama; overcast at on both sides ridge.

9 July 1970

4 mi SSW Limbani, Dpto. Puno, Peru. 13000'

28 live traps took 1 P. ^{orilae} ~~damianus~~ (catalog); 15 snaps took 2 ab. bolivianus + a large oryzomys (catalog); Erik's 20 snaps took 3 ab. bolivianus + 1 Calomys (catalog). Clear calm morning. E.J.K. shot an Oreochilus (L.C. catalog). This area of boulders, rock walls, grass, brush; damp - some moss, ferns. A few flowering shrubs. Car stuck in hole, so some delay. Drove to Limbani. Then off on good road, slightly climbing, to E. about 4 miles, where a village in steep grasslands w. old terraces. Returned to just below Limbani ^{11000 ft} & drove down rough road for about 4 1/2 miles to Aguasviejas & camped by stream. This about 1/2 hr. walk from tunnel at end of road (Chamocaca) where arrived late; set no traps. I collected Oreochilus in 1951. We set about 30 live traps and

Journal

9 July 1970

TO 3 mi. NNE Limbani, 9200 ft., Peru.

~~40 snap traps, mostly near mossy + ferny boulder near stream.~~
 This area almost solid brush - trailing bamboo, pithy second growth - no really solid wood. Traps Rainy + drizzly. Much horse, mule, + Indian traffic along road.

10 July 1970. Visited the tunnel. L.C. collected butterflies + insects. Sunshine morning; foggy + drizzly later.

Set about 30 live traps + 40 snap traps, mostly in damp areas near stream where moss, ferns, brush. Karyo-type slide on Phyllotis coll. yesterday.


11 July 1970. About 35° min. at night. ^{Overcast} sunny morning. Traps held 1 Orolestes (snap), 3 Myzomys of 2 spp., 4 Abrodon. Put up some. Erik shot a few birds for specimens. ^{Drizzly after-} noon + night. Set about 35 live traps, + 8 snap traps, many in maximally wet + mossy places.

12 July 1970. Partly overcast morning; foggy afternoon. Traps held 5 Abrodon, 4 Myzomys; net took 1 bat (colony) over rocky streambed, + later a hummingbird. Erik shot a few birds including red + blue tanagers (one of w. 6 mm. ^{ESK coll.} testis). Put up specimens. L.C. took walk down canyon to 8000', + back. The tunnel was about 8700 ft. We packed + drove up to Limbani, then up to 11500' and camped by road. L.C. shot a Dryocopus, Psallaria, + Colaptes in short order w. 122 shot shell. We set about 15 snap traps, 30 live traps. Mostly near rock walls, boulders, brush, ferns. Damp area w. cultivated patches, cattle grazing; much Indian traffic. We put up one 18 bat + bird net. Drizzly afternoon again. No owl or caprimulgids heard evening.

Journal

13 July 1970

Nr. Aricaña Summit, Depto. Puno, Peru.

Traps held 2 big (Alodon?) w. painted noses (CBK cat.), 1 Neotomys (CBK cat.), 2 Phyllotis vilae? (one EJK cat.), 1 Al. bolivi. Drove up canyon, stopping periodically to photo and observe habitat. Last permanent-looking habitations many vicuñas in rocks along road about 14000 ft. about 13400 ft. Stopped near my 1951 Arizona campsite. Old site now has large compound Indian hut (where roofless before). A narrow canal brings water over 1 mile down a sidehill. No vicuñas or sign. yet, on the whole, not greatly changed. Apparently more heavily grazed. I hiked up canyon about 1 hr, lower, looking for old Peromys trap site. In area where I thought it was (flat, damp; large boulders) the Senecio and other shrubs grazed to negligence. Whole overall aspect at this season brown. I returned down canyon. We drove up road to about 15200', where road makes a  (take near a lake 1/4 mile across, & camped. N-aspect slope has boulders, Festuca, scattered brush, Pycnosphyllum, rock-roses. I set 2 live & 35 snap traps hurriedly in dusk. Clear night, cold. (1.2 mi. by road before summit).

14 July 1970. 19°F. min. last night. Traps held 3 Phyllotis darwini, (1 cat.), 1 Alodon jelskii (cat.), & 1 P. pector (escaped). Habitat looked good & further trapping may have produced Chinchilla & Peromys. But drove to summit to look for higher trap sites and set about 25 live & 11 snap traps there, in rocks near shrubs & thick grass. Camped 3 mi. by road 5^W of summit, near shore of Lake Aricaña. Crib set ^{snap} traps in dry rocky area; I set 5 near foot rock outcrop by road. 1 mile NE of camp near cold clear stream coming down from glacier, I set 11 snap traps near shrubs, rocks, Festuca, & stream. Windy until dark; then calm, clear.

15 July 1970. 19°F. min. temp. Clear morning. Much ice by streams & drips. (icing my 5 traps by camp held 1 P. darwini, Chinchilla (catolog), Eick ^(7 traps) about 1/4 Phyllotis darwini & 1 Alodon jelskii near camp. 1 mile up

Journal

15 July 1970

To Lake Aricaña, Depto. Puno, Peru.

the road, my "snaps" held: 1 P. pector, 1 Neotoma, 1 Abrodon jelskii, 1 Chinchillula, 1 Punomys. Site of last was beside icy shaded stream ~~under~~ boulder in thick Festuca, Senecio, tola (photos). This was first time I had trapped N of the Aricaña summit (I don't recall Chinchillula at 9 mi. SSW Lincón site in 1951). Because of good results, I set about 40 live traps (+ 4 snaps) in the area 1 mile S. of camp, putting about 5 traps within 10' of where I took Punomys. Carefully selected trap sites. Used folding aluminum Sherman traps w. mixture grain as bait. Erik set about 20 snap traps in dry rocky area near lake. I put 6 live traps along outcrop where I got a Chinchillula ~~pan~~ last night. / about 8 p.m., Erik showed me one area where cactus had been eaten, apparently by Chinchillula, judged by large black droppings. At mouths some burrows near rocks and shrubs, many droppings; ground covered at mouth on burrow. Trap some woody cactus fruits cut off + seeds exposed. Parts of fuzzy from cactus dragged into holes. We put 5 live traps in that area and 4 steel traps, in addition to the 10+ snaps already there (one held a dead Chinchillula). Calm clear night.

16 July 1970. The traps in Chinchillula area held 3, one alive (later in C. K. catalog). My live traps 1 mile up road took only 3 P. pector (another in snap trap), in spite of expectations. about 19° F. last night. / ~~the~~ Often saw a pair of Chloephaga geese on shore of Lake Aricaña or near it. Atlagis in groups of 4 to 20. Dried reed on L. Aricaña - no water plants at surface; no reeds; rather a dead lake. / We departed & drove to Cuzco, about 20 mi. from Aricaña summit. Supplies & gas. Then on to Areillo. Took road to Piñora, where hoped to confer w. Univ. Peru. anthropologists. Road turned out to be

Journal

16 July 1970.

Nr. Nuñoa, Dpt. Puno, Peru.

poor, w. frequent forks & no signs. Camped on pampa about 10 mi. SE of Nuñoa ^{12,400 ft.}. I set 10 snap traps in dark, near foot rocky hill.

17 July 1970. Traps held 3 Phyllotis (catalog 1). Thermometer indicated 9° F. min., in spite low altitude. We drove on toward Nuñoa. About 5 miles short of it we passed fine lake with extensive growth of reeds, many water plants, many coots, ducks, ibis. Here, too, started a quercus forest which extended over various hills; many birds. We went on to Nuñoa; the anthropologists were off on trip to Cuzco but expected back in evening. So we drove back 3 miles to the quercus forest and camped near rocky hills. LC went off to look for Oreotrichilus roosting caves. She returned in eve with 2 Oreomanes which she observed (and heard) pulling shreds of red bark from the quercus tree (see her notes). Erik & I set about 30 snap traps, 7 steel traps, 4 live traps, mostly near rocks, brush, & thick grass. We saw vicuñas in area. Comfortable evening. Heard no owls, tho Erik ^{flushed} saw a caprimulgid in afternoon.

18 July 1970. About 19° F. min., 13,400 ft. Traps held only 1 Calomys & a few Phyllotis & Onychomys. Shot a few birds & saw Oreomanes. It had looping flight, nuthatch-like, and sometimes perched in top branches of quercus trees. I saw one several times in rather open stands. A few parakeets in area; others seen in roadside grasslands. We found no hummingbirds. I flushed a brownish caprimulgid; wing here brownish too, rather

Journal

18 July 1970

Nr. Nuñoa, Dpt. Pang Peru.

than white. / Again to Nuñoa; the anthropologists had not returned. At their headquarters here, a man told us it was 3 hours to Mocurani, another $1\frac{1}{2}$ to Chacha. One anthropologist had told L.C. that there were hats in a cave at summit of Crucero to Mocurani road. / We drove via Santa Rosa and Oyángaro to Heda Chayani, where L.C. made further inquiries about hummingbirds. Above casero, many Puya raemondi on slope, but none in bloom. Heda also included a large lake w. coats & ducks (some coats ^{sitting} on weed ^{likely} apparent nests - we saw 2 young coats near Nuñoa). Then on to cliffs near reft hacienda, where L.C. searched in dark for Oreotrochilus and found one, which she kept (now has 2 in captivity). We drove on in dark to Calacala and camped nearby.

19 July 1970. Frosty night. Sunday. To casero where we ate, rested, cleaned up. I searched for grassland area suitable for mouse live-trapping grid. Set 10 live traps in one pasture, 5 in another. Saw 2 ^{sericee} tinamous and about 10 snipe. Put 5 steel traps near road walls for Galea.

20 July 1970. Continued search for live-trapping sites. Finally set ²⁵ 46 live traps in grid, + 3 monofilament snares in one pasture, 15 live traps in another. About 11 a.m. took a juv. ^(180gms) Cavia Galea near road wall; no others by 5 p.m. Set trap in a storehouse for a weasel, which previously left a mound of bird feathers there. A few days ago, a man working on house roof saw a weasel come out of chimney.

Journal

20 July 1970

H. da Salas, Ruy Ferv.

area. Dozens of doves in trees + on ground near caserio, and flocks of Zonotrichia capensis.

21 July 1970. The trap grid took only 2 imm. Alouatta belinzei; marked 1, released back. The traps in other pasture (taller grass, grass short reg. between) took 0. No luck in snares either. Took up all but the grid of 25. Reset 6 steel traps for Cavia, where much sign, many trails + droppings, and saw two. Repaired lamps + equipment.

22 July 1970. A foot of Cavia in steel trap (after 5 p.m. yesterday). Grid of 25 live traps held 2 imm. Alouatta, as before. No catch in snares. En. P. had told us of a lake on higher part of ranch. Pachillococha ^{it} Quilillacocho (?) and sent a man to guide me there. It was 2 1/2 hrs. walk, not steep but tiring at altitude. Essentially, one goes to edge of vicuña pasture, thence about 1 mile NW across open short grazed grassland. Lake about 200 x 50 yds, surrounded by tall grass and about 3 ^{slopes} ~~slopes~~ of Dactyloctenium. Nearby, cliffs about 100 ft. high, w. areas of ice at base. Some boulder slides - in one, about 50 viscachas in the area about 4 acres. A few areas of Sarcocolla but too rare. No trees. Several birds are ^{flying} ~~looming~~ near cliffs and calling; wing beat very rapid, as if in a display. Two crested ducks on lake, + juncos and other small birds. Not too exciting a collecting spot. No indication Chondrocyttus or other large rts. I returned alone in early afternoon. A rocky hill about a mile NW of caserio had brush, ^{maguey, and} red-flamingo grass on N. side (away from valley + road), and may be good trap area (just outside of vicuña pasture). In about 5 hours walking grasslands I saw only one tinamou; then I entered vicuña pasture and walked along a small canal. Within 1/2 hr. I saw + Notthoprocta and logged one. (515 gms., ♀ - ovs. < 1 mm.) - (no specimen cataloged). All snakes, except a second flammaria from vicinity where I shot one. At this season they probably need water. In general, many fewer than in 1951, largely because of less tall grass (more grazing). No catch in steel traps 50m.

Journal

23 July 1970.

H. de. Calacala, Depto. Puno, Peru.

The 25 live traps held 3 Akodon bolsonensis, all dead. Took up traps. The 6 live traps held 0 at 0630, but 2 Cavia about 10 a.m. of 175 gms. 1 gave to Sr. Paredon, alive. ♀, 290 gms., died shortly after put in live trap (why? - had only ^{compound} fracture of front leg). Calm sunny dry day; reset 2 steel traps for Cavia & took up rest. We walked about 2 mi. NNE to rocky hill where we set 33 snap traps, 10 live traps, 4 steel traps near boulders among agave, shrubs. Flushed 3 Nothoprocta on way, in vicuña pasture. Vicuñas seem to be in natural bands - some ^{very} obviously hybrids.

24 July 1970. Took up traps. Caught 6 P. erilis, 1 Ak. jelskii, 1 P. pistus, 1 Chinchillula jiv. Erik shot a Nothoprocta (480 gm. ♂, t. 5) on way back. Fiesta de Calacala continued, increasing, with "musica" and dancing and beer. L.C. had been off to Chacayani; returned. 4 more live Oreotrichilus. Erik & I packed and departed (w. various gifts from Sr. P.) for Juliaca. Supper there, then drove on about 30 miles toward Arequipa and camped. No traps set.

25 July 1970. Cold night. We drove on. About 42 mi. from Juliaca, large Lag Lake, Lagunillas, w. hundreds of coots & some weed islets. About 50 miles out, smaller lake, w. perhaps 20 nesting islets of coots. Fine clear day. We drove on to summit, about 150 km. from Juliaca, where I worked on vicuña in 1952. Found none, although habitat little changed. a few more Indian huts; perhaps more sheep than before - rather dry & beaten dry stock. We looked for Tamias and found numerous fresh tracks (about 1 mile N. of the pass, 13300' by our altimeter). Also tracks of fox & skunk. Rather warm - blue landscape w. rock formations, yareta, Pyrenophyllum, and much soft bare ground. A few versicolor seen. Then on to

Handwritten signature or scribble, possibly reading "H. H. H."

Journal

25 July 1970

Nr. Arequipa, Peru.

Salitara and on - very dry. Laguna Salina nearly dry - white salt bed; 14100 ft. Descended then, looking for *Phyllotis magister* trapping site about 30 mi. before Arequipa, took side road to N. into canyon bottom where much brush, rocks, rock walls, dry creek. Set 37 live traps there, with good view of El Misti. Cool evening.

26 July 1970.

To Coast

Sunday. Well above freezing in morning. Traps held only a *Mus* and a *Phyllotis darwini* (categorized). But mouse box traps seen in dust; the aluminum live traps again did poorly. We reorganized gear, then went to Arequipa, shopped. Then on down to coast through rocks, sand, arid vegetation (where any) to Camana, and on about 30 miles toward Chala. Camped after dark at edge ocean. Above Arequipa, near about 9000 ft., saw 2 (or +) condors near a few turkey vultures. Saw one caracal about 12000' to E. of Arequipa.

Altitude registers 8800 ft. at Arequipa, + 400' at sea level!

To nr. Nazca, Peru.

27 July 1970. Drove on north to Chala. Saw no condors along the way (in contrast to 1951 spring). Then on to Nazca, where visited w. Bill Franklin. He is due to leave Peru (and vicuña study) next March. We camped about 20 miles toward sea.

28 July 1970. Much rocky desert, but sand hills ^{a few} ~~several~~ ^{hundreds} feet high to W. of sea. Much cotton grown here. Then on to Palpa (many oranges for sale) and turned off at km. 250 to Paracas and Lagunillas. There we beachcombed and found dead *Macronectes* (sawd shell), dolphins shells, 2 fresh (a few months old) and several older shells of *Dermodelphys* turtle. Usual *Tropidurus* (?) running among rocks and junks on beach. Old ^{a few seal} ~~sea lion~~ carcases w. hide fairly intact but skulls broken. Saw 2 condors low over beach area. But stuck in sand; stayed overnight.

Journal

29 July 1970

To Lima, Peru.

Finally truck pulled us out of sand. We drove on north to Lima.
Camped at airport in car.

To Lachay

30 July 1970. Ned Johnson arrived w. Bob Jones and Carlos

Martinez on early flight (0610) & cleared customs w/o difficulty. We
stopped in Miraflores, then spent eve w. Manuel Plenge (+ wife) and Maria Kuepke
at Plenge house (654 Pata, Miraflores). Drove in evening to Churin
road above Churay (km. 86⁺), then off 10 1/2 km. & camped on E. side
of Lower Lachay, as in 1967, '69.

To nr. Morupe

31 ~~August~~ ^{July} 1970. We drove north. Supper at Trujillo. Camped
just S. of Morupe, near Lambayeque border, among sand hummocks.
We set about 20 snap traps near shrubs.

1 August 1970. Traps held 1 Muss (1 marked), as in 1967. Drove
on to Chiclayo, where stopped. Then on north past Pisco and
TO Quebrada Parinas, nr. Talara, Opt. Pisco
full on to Talara. Then inland on "Pisco Parinas" road about
7 miles and camped within 1/2 mi. of Pisco grounds. Listened
for owls & caprimulgids but heard none. Noctuid birds common,
small red woodpecker common (*Vanellus*?), green woodpecker (*Pic-*
ulus) present, & woodhewers, flycatchers, big finches, others.

2 August 1970. Saw bats among trees at dusk & dawn. We collect-
ed and put-up birds near camp. Primarily mesquite trees about
20' high bordering streambed (dry). Generally dusty & dry.
Herds of goats came through camp at times, and people on
donkeys came for water at well. 2 nets took 2 birds but
no bats. Erik shot a fox in dark; we saw several in area; many tracks.
I set 20 live traps near tree roots and under boulders on a
slope; perhaps Corynorhinus here. Ned & I walked woods hunting
for owls but found none.

Journal

3 August 1970NE of Toluca, Dpt. Pinar, Peru

No catch in traps or in 1 bat net. Again hunted birds. In afternoon we broke camp + drove farther E. up Q. Parímar, but road petered out in wash before reaching Monte Isanda. So returned to highway, drove north 3? miles, + took always road to ^{Fondo} ~~Fondo~~ (about 7 miles to turnoff to N. into quebrada Honda). Found site of 1967 camp, a mile below (W of) road into quebrada, + camped under 20-30 ft. mesquite trees. This quebrada is narrower than Parímar, perhaps somewhat drier and more open, but w. some copal bushes. We saw a flock of parrots. I set up 2 nets + took a Tomapeas bat in evening. Again we heard no ^{owls} ~~owls~~ or caprimulgids at night.

4 August 1970. No other catch in nets, except 1 finch (catalog). We again hunted birds. In afternoon, Erik and I took car back to Parímar road, about 1 1/2 mi. E. of paved highway, and set 10 live and 30 snap traps under copal and mesquite bushes on sand hummocks in a desert zone. Between sand hills, ground covered w. fine broken shells (in form of very coarse sand). Wind prevented good trap setting, + wind persisted at 8 p.m. Left traps + returned to Fondo camp.

5 August 1970. Again no catch in nets, tho bats seen (one net ripped and apparent Desmodus droppings below). Many foxes seen in evening, and one. Went to trap line which held 2 Chrysolais gerbillus and 1 Mus (all in catalog). Mus taken under 4' copal bush about 90 yds. from copal + mesquite bush where P.g. taken. Other P.g. was under copal bush (mangrove-like leaf). This is first record of Mus + P.g. in same trapline, first north of a 1967 site a few mi. NW of Pinar. Good range extension.

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^{Fardo, nr Talara, Dept. Piura, Peru.}
Returned to camp. ^{No catch in bird nets, ~~including~~ ^{including} ~~the~~ ^{the} ~~bird~~ ^{bird} ~~net~~ ^{net} ~~under~~ ^{under} ~~mequter~~ ^{mequter}.}

Worked on car repairs. Departed in afternoon for Talara, where we stopped. Then drove on to Piura (dinner). Then on back S. to Olmos, and 10 1/2 mi. toward Porculla Pass to the red bridge. Camped there at midnight (same site as one 1969 camp) in near small mossy stream among hills w. sparse deciduous woodland, now leafless but w. many bromeliads.

6 August 1970. Collected 2 ^{to E. of Olmos} ~~summer~~ ^{to E. of Olmos} ~~larvae~~ ^{larvae} and a black & white ~~larva~~ ^{larva} (one in cold storage; 2 given to R. Jones). Set up camp. Erik & I prepared to depart. Ned drove us to Chiclayo, where we took a ~~bugger~~ ^{bugger} bus at 9 p.m. for Lima (200 soles).

7 August 1970. Arrived Lima 0830 - foggy & ^{Lima} ~~drizzly~~ ^{drizzly}. We went to Hotel del Sol, ^{from plane,} ~~the~~ ^{from plane,} ~~for~~ ^{for} ~~the~~ ^{the} ~~night~~ ^{night} ~~at~~ ^{at} ~~the~~ ^{the} ~~Hotel~~ ^{Hotel} ~~del~~ ^{del} ~~Sol~~ ^{Sol}. Then visited Plenge in Miraflores to get stored specimens.

8 August 1970. Repacked to depart in evening by plane for San Francisco. Departed 2240 p.m. on Braniff fl. 920.

9 August 1970. Arrived Los Angeles before dawn and went through customs. Some conversation about letting specimens in, but no delay. On to San Francisco, where took bus to Oakland. Drove to Berkeley.

End of trip

